

New genera and species of canopy living Clubionidae (Araneae) from Papua New Guinea

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Abstract

The paper reports on a collection of Clubionidae (s.l.) of canopy dwelling Clubionidae. Two new *Matidia* (Clubionidae, Araneae) species (males and females), *Matidia missai* and *Matidia strobbei* are described. Two new genera are proposed: *Arabellata* with two new species *A. nimispalpata* and *A. terebrata*, and *Invexillata* with three new species, *I. maculata*, *I. caerulea* and *I. viridiflava*.

The creation of the new genera is justified by a phylogenetic analysis of the Clubionidae s.s. carried out on a morphological character set used by BOSSELAERS & JOCQUÉ (2002) and supplemented with four characters. The analysis on the matrix with 35 species and 161 characters was done with NONA (the ratchet, interfaced with Winclada) with all characters unordered. This resulted in a single tree. The analysis was preceded by another one in which males and females of the ingroup species were scored separately in order to corroborate the matching of the sexes.

Key words: *Matidia*, *Arabellata*, *Invexillata*, new species, new genera, phylogeny, Papua New Guinea, canopy fogging, matching of sexes.

Introduction

The Clubionidae *sensu lato* (SIMON, 1897, 1898, 1903) consisted of 182 genera divided into seven subfamilies (Selenopinae, Sparassinae, Clubioninae, Cteninae, Liocraninae, Micariinae and Corinninae). Simon based his grouping on the basis of the absence of characteristics typical for other large families. Gradually, subfamilies and groups of species were split off and now only 24 genera (15 genera in Clubionidae s.s.) are left (PLATNICK, 2009). LEHTINEN (1967) for instance, raised the Corinninae and Liocraninae to family rank. BOSSELAERS & JOCQUÉ (2002), in a paper highlighting the problems in the family, proposed to transfer the Phurolithinae to Corinnidae but no other rearrangements could be deduced from their analyses without loss of taxonomic stability.

The phylogeny of the family Clubionidae s.l. is still

the subject of many discussions and interpretations. The placement of the different genera and species in this large family changes regularly. For example, according to RAMIRÉZ *et al.* (1997) *Cheiracanthium* was transferred to the Miturgidae but DEELEMAN-REINHOLD (2001) places this genus back in the Clubionidae. Based on the fauna of South East Asia, DEELEMAN-REINHOLD (2001) indeed proposed to place the Eutichurinae back in the Clubionidae and created a new subfamily (Systariinae).

According to DEELEMAN-REINHOLD (2001) the family Clubionidae is represented by three subfamilies in the South East Asian region: Clubioninae, Eutichurinae and Systariinae. The species studied in this paper belong to the Clubioninae. Only 3 genera (*Clubiona*, *Matidia* and *Simalio*) of this subfamily are widely spread in the South East Asian region. DEELEMAN-REINHOLD (2001) proposed two new genera (*Pteroneta* and *Scopalio*) in South East Asian material. New species of *Pteroneta* have been discussed in VERSTEIRT *et al.* (2008) and several more new clubionid genera and species from the fogging material of the Papua New Guinea project remain undescribed.

The genus *Matidia* was regarded as putatively polyphyletic by DEELEMAN-REINHOLD (2001) and new, closely related genera were added (*Pteroneta*, *Nusatidia*, *Pristidia* and *Malamatidia*). *Matidia* is a genus characterized by the combination of the following characters: leg I longer than IV and II, the narrow head and the distal position of the pro-marginal cheliceral teeth. The genus was first described by THORELL (1878) on a female of Ambon. According to DEELEMAN-REINHOLD (2001), the male pedipalp has a ribbon-shaped embolus, originating prolaterally and swung clockwise around the membranous prolongation of the tegulum in the left pedipalp; the epigyne has the copulatory openings situated in a central depression and short copulatory ducts. However, *Matidia* species

found during the present survey did not have these characteristics, which might imply that the definition of the genus has to be changed and enlarged. It could also mean that *Matidia* has to be considered as a genus with 2 zoogeographic groups, a western Sulawesi group (*M. mas* DEELEMAN-REINHOLD, 2001 and *M. simian* DEELEMAN-REINHOLD, 2001) and an eastern New Guinea group (the species here described). The same split is suggested by the results of the cladistic analysis (see below) but since the placement of these two groups is not stable it is considered premature to erect a new genus to accommodate these species.

Matching the sexes of these similar species was often problematic. We used three criteria for the purpose; the combined occurrence of males and females in several samples and compatibility of epigyne and male palpal structure. The third criterion is novel; we scored males and females as different terminals. The cases where males and females turned out to be sister groups or where they are closer on the tree than the opposite sex of another species, were considered as confirming the matching that was done on the previous two criteria. In a few cases, the sexes were not sister but were closer to each other on the cladogram than to opposite sex of another species.

The present paper further reports on two more new genera (*Arabellata* n. gen. and *Invexillata* n. gen.) found during canopy fogging in Papua New Guinea with respectively two and three new species.

The specimens described in the present study are deposited in the Department of Entomology of the Royal Belgian Institute of Natural Sciences (Brussels).

Material and methods

Specimens were collected during a sampling campaign with the insecticidal fogging technique (ERWIN, 1989) in a 1 km² area located in the center of Baiteta Forest (5°01'S, 145°45'E, Madang Province, Papua New Guinea). The campaign was spread over three sampling periods (March-June 1993, March-June 1994 and April-August 1995), covering the end of the rainy and the beginning of the dry season. During the first two sampling periods individual trees with large discrete crowns were fogged whilst during the last sampling period trees with intermingled crowns were sampled (MISSA, 2000). The codes of the sampled trees are listed in Table 1.

Specimens captured during the fogging campaign were afterwards stored in 75% ethanol.

External morphology was studied, and sclerites

measured and drawn with a Wild M8 stereoscope. Epigynal structures were cleared in methyl salicylate and drawn with a Leica microscope. The left male pedipalp is illustrated and described. The internal structure of the epigyne is only shown if additional information is gained from such an illustration.

Measurements of body length do not include chelicerae or spinnerets.

In serial spines an asterisk is used to indicate unpaired spines, for example: 2*d means 2 unpaired (serial) spines on the dorsal side of the leg whilst 202d means 4 paired spines (2 proximally and 2 distally. Spines that were broken off (marked by the socket) were also counted.

Abbreviations

I = 1st leg, II = 2nd leg, III = 3rd leg, IV = 4th leg, d = dorsal.

Fe = femur, Mt = metatarsus, p = prolateral, Pa = patella, PL = post lateral eyes, PME = post median eyes, r = retrolateral, Ta = tarsus, Ti = tibia, v = ventral.

Phylogenetic analysis

The characters used for the phylogenetic analysis are taken from the study by BOSSELAERS & JOCQUÉ (2002) for their analysis of Clubionidae s.l. The matrix was supplemented by four additional characters mentioned in Table 2.

The outgroup taxa were chosen among those used by BOSSELAERS & JOCQUÉ (2002) in the study mentioned above. We used 4 liocranid species: *Agroeca brunnea*, *Hesperocranum rothi*, *Liocranum rupicola* and *Mesiotelus cyprius*; 1 corinnid species: *Corinna nitens*; 3 miturgid species (sensu PLATNICK, 2009): *Miturga lineata*, *Cheiracanthium klabati* and *C. pennuliferum* and 2 non-oriental clubionid species: *Clubiona pallidula* and *phragmitis*.

The ingroup of the analysis consisted of 14 species (4 genera), belonging to the Clubionidae found during the fogging project in Papua New Guinea. Apart from the 10 species here described we included a number of Oriental and Papua New Guinea species of closely related genera, and where possible, the type species (Clubioninae: *Malamatidia bohorokensis*, *Simalio lucorum*, *Simalio petilus*, *Simalio phaeocephalus*, *Nusatidia javana*, *Matidia simia*, *Matidia mas*, *Pristidia viridissima*, *Pristidia prima*, *Pteroneta longichela*, *Pteroneta brevichela*, *Pteroneta baiteta* and *Pteroneta*

madangiensis; Systariinae: *Xantharia floreni*, *Systaria gedensis* and *Tamin pseudodrassus*).

In fact two sets of analyses were done. A first set of analyses was carried out with a matrix (Table 3) with 40 terminals and 159 characters. For the ingroup taxa, males and females were scored separately as different terminals. The idea of this exercise was to obtain additional support for the matching of males and females we had hypothesized mainly on the basis of co-occurrence frequency and compatibility of epigyne and male pedipalpal structures.

The final matrix (Table 4) used to analyze the relationships of the taxa we studied contained 37 terminal and 161 characters. For both sets, the analyses were performed with NONA 2.0 (GOLOBOFF 1999) interfaced with Winclada (NIXON 2000) and with TNT (GOLOBOFF *et al.* 2008). Uninformative characters (resp. 41: 6, 9-12, 37, 72, 73, 84, 94, 102-106, 108, 109, 112-117, 120-124, 128, 131, 132, 135, 136, 138, 142, 143, 147, 149, 150, and 36: 6, 8, 9-12, 37, 72, 73, 84, 94, 102-106, 112-117, 120-124, 128, 131, 132, 138, 142, 143, 147, 50) were made inactive and we used the ratchet (200 iterations, 1 tree to hold, 16 characters to sample) for the analyses.

Results

That analysis in which the ingroup males and females were scored separately resulted in 10 trees of length 533, CI = 34 and RI = 58. The strict consensus was used to corroborate the tentative matching (Fig. 36). Most of males and females of the species to be matched turned out to have a sister relations hp on the tree and corroborated the matching that had been done on the basis of morphology. In a few cases there was a paraphyletic relationship but closer to each other than to the opposite sex of another species.

Both the NONA and TNT analyses (Fig. 37) resulted in a single with length 605 (CI 32, RI 52).

The four species of *Pteroneta* and the two species of *Arabellata* form monophyletic groups. It is remarkable that *Arabellata* is sister to *Miturga lineata*. *Invexillata* turns out to be paraphyletic. The type species is sister to the two other *Invexillata* species and *Pteroneta*. The situation for *Matidia* is somewhat more complicated: it is paraphyletic and falls apart in three clades: the most derived subgroup contains the two *Matidia* species from Indonesia but also *Pristidia prima*. Both the other subgroups of *Matidia* contain the species from Papua New Guinea. *P. viridissima* is sister to the group containing *Invexillata* and *Pteroneta* which implies that

Pristidia is polyphyletic. *Tamin* and a *Systaria* species, although for the moment considered to be Miturgidae, end far from the type genus of that family. They might turn out to be Clubionidae after all.

Taxonomic part

Matidia THORELL, 1878

Type species. *Matidia virens* THORELL, 1878

A redescription of this species is provided by DEELEMAN-REINHOLD (2001) on the basis of a female from the type locality, the island of Ambon (Moluccas) collected in 1995.

For the diagnosis and description of the genus we refer to the work by DEELEMAN-REINHOLD (2001).

Matidia muju CHRYSANTHUS, 1967

(Figs 1-3)

(Drawings of male palp and female epigyne are based on specimens belonging to this Papua New Guinea material, due to the unavailability of the type material of the History Museum of Leiden)

MATERIAL EXAMINED: PAPUA NEW GUINEA (Baiteta forest, Madang Province): AR 18 (2 ♀), AR11 (1♀), AR17 (1♂), AR18 (1♂), AR20 (1♀), AR25-14 (2♂), AR28 (2♀), AR29 (1♂), AR33 (1♀), AR38-2 (1♂), AR42 (1♀), AR43 (2♂), AR49-12 (2♂), AR50 (2♀), AR54 (1♂, 1♀), AR56 (1♂, 4♀), AR57 (2♀), M1 (1♀), M1" (1♂), M2 (1♂), M4 (2♂, 2♀), M5 (2♂, 1♀), M8 (1♀), T5 (1♀), T7 (2♀), T10 (2♂), XA (3♂, 1♀), XC (8♂, 7♀), XF (1♀), XG (1♀).

DIAGNOSIS: Males can be recognized by the swollen basis of the embolus; the slender, strongly curved embolus tip, similar to the shape of a flamingo beak, continuing in a long needlelike apical part; sperm duct with a deep S-curve in the proximal half of the tegulum which has a blunt, apical extension; and tip of the cymbium slender and conical (Figs 1-2). Females are recognized by two large depressions with the copulatory ducts running apically of the spherical anterior receptacula and entering posterior receptacula meso-apically (Fig. 3).

DESCRIPTION:

Male: Total length: 5.56 mm; carapace length: 2.36 mm, width: 1.72 mm; abdomen length: 3.20 mm and width: 1.08 mm. Eyes: PME: 0.26 mm and PL: 0.66 mm apart, head width: 0.86 mm

Prosoma and opisthosoma: Spiders with brownish-yellow cephalothorax and a yellow abdomen. Chelicerae with 3 pro-marginal teeth and 2 retro-marginal teeth.

Legs: Spination: Fe I-II 3*d 2*p 2*r, III-IV 3*d 1p 1r; tibiae I-II 2*d 1p 1r 220v, III 2*d 2*p 2*r 120v, IV 2*d 2*p 2*r 220v; metatarsi I-II 200d 200v, III 212d 2*p 1r 202v, IV 2212d (1-2)*p 1r 222v. Measurements: Fe I: 2.92 mm, Pa+Ti I: 4.20 mm, Mt I: 2.12 mm, Ta I: 1.24 mm; Fe II: 3.00 mm, Pa+Ti II: 4.08 mm, Mt II: 2.24 mm, Ta II: 1.08 mm; Fe III: 2.04 mm, Pa+Ti III: 2.16 mm, Mt III: 1.68 mm, Ta III: 0.56 mm; Fe IV: 3.36 mm, Pa+Ti IV: 3.48 mm, Mt IV: 3.24 mm, Ta IV: 0.80 mm

Pedipalp (Figs 1-2): Tibial apophysis blunt, with two dorsal spines. Tip of cymbium slender with three spines in apical part and two retrolateral spines. Tegulum elongated, almost twice as long as wide. Sperm duct long, showing deep S-curve in proximal half of tegulum. Base of embolus thickened; embolus slender with strongly curved tip continuing in a long needlelike apical part. Subtegulum conspicuous. .

Female: Total length: 6.16 mm; carapace length: 2.48 mm, width: 1.68 mm; abdomen length: 3.68 mm and width 1.48 mm. Eyes: PME: 0.28 mm and PL: 0.66 mm apart, head width: 0.88 mm.

Prosoma and opisthosoma: Slightly darker than male. Chelicerae with three pro-marginal and two retro-marginal, small teeth.

Legs: Spination: femora I-II 3*d 2*p 2*r, III 3*d 1p, IV 3*d 1r; tibiae I-II 3*d 1*p 220v, III-IV 2*d 2*p 220v; metatarsi I-II 200d 200v, III 212d 1p 202v, IV (2-2-01-10)d 2*p 1r 222v. Measurements: Fe I: 2.48 mm, Pa+Ti I: 3.60 mm, Mt I: 2.12 mm, Ta I: 0.88 mm; Fe II: 2.44 mm, Pa+Ti II: 3.28 mm, Mt II: 1.92 mm, Ta II: 0.76 mm; Fe III: 1.88 mm, Pa+Ti III: 2.16 mm, Mt III: 1.60 mm, Ta III: 0.68 mm; Fe IV: 3.00 mm, Pa+Ti IV: 3.44 mm, Mt IV: 3.08 mm, Ta IV: 0.92 mm.

Epigynum (Fig. 3): Receptacula with two pairs of spherical receptacula, one anterior and one posterior pair. Anterior ones smaller and strongly sclerotized; short fertilization duct situated laterally between anterior frontal and posterior receptacula. Copulatory openings situated antero-laterally of two large spherical depressions, looped apically for nearly 180° over anterior receptaculum, entering posterior receptaculum meso-apically.

***Matidia chloria* CHRYSANTHUS, 1967**
(Figs 4-7)

(Drawings of male palp and female epigyne are based

on specimens belonging to this Papua New Guinea material, due to the unavailability of the type material of the History Museum of Leiden)

MATERIAL EXAMINED: PAPUA NEW GUINEA (Baiteta forest, Madang Province): AR1 (1♀), AR20 (2♂, 2♀), AR28 (1♂), AR39 (2♀), AR40-20 (1♀), M3 (2♂, 2♀), M5 (2♂), M6 (7♀).

DIAGNOSIS: Males can be distinguished by the shape of the swollen embolus base, the length of its tip and by the long curved sperm duct in the tegulum (Figs 4-5). Females can be distinguished by the small, conical anterior spermathecal receptacula and the short copulatory ducts (Figs 6-7).

DESCRIPTION:

Male: Total length: 7.7 mm; carapace length: 3.7 mm, width: 2.25 mm; abdomen length: 3.95 mm and width: 1.3 mm. Eyes: PME: 0.3 mm and PL: 0.78 mm apart, head width: 1.25 mm.

Prosoma and opisthosoma: Colour as in female but somewhat darker. Chelicerae with three pro-marginal and two retro-marginal teeth.

Legs: Spination: femora I-II 3*d 2*p 2*r, III 3*d 2*p 1r, IV 3*d 1p 1r; tibiae I-II 2*d 1p 1r 220v; III-IV 2*d 2*p 2*r 220v, metatarsi I-II 200d 200v, III 212d 2*p 1r 202v, IV 2211d 2*p 1r 222v. Measurements: Fe I: 3.6 mm, Pa+Ti I: 5.9 mm, Mt I: 2.95 mm, Ta I: 1.55 mm; Fe II: 3.05 mm, Pa+Ti II: 4.55 mm, Mt II: 2.45 mm, Ta II: 1.3 mm; Fe III: 2.25 mm, Pa+Ti III: 2.75 mm, Mt III: 2.2 mm, Ta III: 0.85 mm; Fe IV: 3.8 mm, Pa+Ti IV: 4.1 mm, Mt IV: 3.8 mm, Ta IV: 1.05 mm.

Pedipalp (Figs 4-5): Tibia with up to five large spines on retrolateral side; tibial apophysis brownish, conical and rounded at tip. Cymbium long, setose, without apical spines. Tegulum oval, 1.5 times longer than wide; subtegulum membranous structure emerging on prolateral side of tegulum. Sperm duct long, running from globular reservoir in anterior part of tegulum, backward to proximal end, thence curved, running back to apical tip of tegulum; embolus short, swollen, curved with short prolateral loop, and short straight tip.

Female: Total length: 7.98 mm; carapace length: 3.52 mm, width: 2.75 mm; abdomen length: 4.47 mm and width 1.62 mm. Eyes: PME: 0.33 mm and PL: 0.83 mm apart, cephalic area width: 1.4 mm.

Prosoma and opisthosoma: Brownish-yellow. Chelicerae with three pro-marginal and three, very small retro-marginal teeth.

Legs: Spination: femora I-IV 3*d 2*p 2*r; tibiae I-II

2*d 1p 1r 220v III-IV 2*d 2*p 2*r 220v; metatarsi I-II 2*d 2*v, III 212d 2*p 1r 202v, IV (2-2-01-2)d 1r 222v. Measurements: Fe I: 3.71 mm, Pa+Ti I: 5.8 mm, Mt I: 2.85 mm, Ta I: 1.43 mm; Fe II: 3.23 mm, Pa+Ti II: 5.04 mm, Mt II: 2.47 mm, Ta II: 1.33 mm; Fe III: 2.28 mm, Pa+Ti III: 2.85 mm, Mt III: 2.09 mm, Ta III: 0.95 mm; Fe IV: 3.9 mm, Pa+Ti IV: 3.99 mm, Mt IV: 3.8 mm, Ta IV: 1.05 mm.

Epigynum (Figs 6-7): With two small proximal depressions; copulatory openings proximally near epigastric fold. With two pairs of receptacula: posterior pair spherical, anterior pair bluntly conical; septum conspicuous; strongly sclerotized copulatory ducts in mesal position, short, opening in proximal, mesal part of posterior receptacula. Fertilization in mesal position. Posterior receptacula, separated by 1/3rd their diameter, anterior ones separated by half their width.

***Matidia missai* n. sp.**
(Figs 8-10)

TYPE MATERIAL: Holotype: male: Papua New Guinea: Madang Province, in the center of Baiteta forest (5°01'S, 145°45'E), 3/6/1996 on unknown tree species (AR54), Female Allotype: 3/6/1996 on unknown tree species (AR54); Paratypes: AR8 (1♂, 5♀), AR9 (2♀), AR15 (2♂, 3♀), AR 16 (1♂), AR17 (2♂, 5♀), AR19 (2♂), AR20 (1♂, 1♀), AR25-14 (2♀), AR34 (1♂), AR35 (2♂), AR38-2 (1♂), AR54 (2♂, 1♀), AR57 (1♂), AR68 (1♀), M1 (1♂, 1♀), M5(5-19) (1♂), M6 (1♂), M9 (1♀), T1 (1♀), T11 (1♀), T12 (1♀), XB (1♂), XB" (1♂), XD (1♂, 1♀), XF (1♂, 1♀), XG (1♀).

ETYMOLOGY: The species name is a patronym in honour of Dr. Olivier Missa who collected the spider material.

DIAGNOSIS: Males of this species are distinguished by the shape of the embolus, which is slender and coiled, then enlarged and ending in a very short tip (Fig. 8). Females are characterized by the copulatory ducts running backwards mesally and opening close to epigastric fold (Fig. 10).

DESCRIPTION:

Male Holotype: Total length: 5.2 mm; carapace length: 2.3 mm, width: 1.68 mm; abdomen length: 2.85 mm and width: 1.08 mm. Eyes: PME: 0.19 mm and PL: 0.53 mm apart, head width: 0.8 mm.

Prosoma and opisthosoma: Brownish-yellow. Chelicerae with three pro-marginal and two, large retro-marginal teeth.

Legs: Spination: femora I-II 3*d 2*p 2*r, III-IV 3*d 2*p 1r; tibiae I-II 2*d 1p 1r 220v, III-IV 2*d 2*p 2*r 220v; metatarsi I-II 200d 200v, III 212d 2*p 1r 202v, IV (2-1-10-01)d 2*p 2*r 222v. Measurements: Fe I: 3.25 mm, Pa+Ti I: 4.85 mm, Mt I: 2.8 mm, Ta I: 1.45 mm; Fe II: 2.8 mm, Pa+Ti II: 3.75 mm, Mt II: 2.25 mm, Ta II: 1.15 mm; Fe III: 1.8 mm, Pa+Ti III: 1.85 mm, Mt III: 1.7 mm, Ta III: 0.7 mm; Fe IV: 3.2 mm, Pa+Ti IV: 3.3 mm, Mt IV: 3.4 mm, Ta IV: 1.0 mm.

Pedipalp (Figs 8-9): Tibial apophysis large, thumblike, with rounded tip. Cymbium long, rather small, setose, without spines. Tegulum oval, longer than wide. Subtegulum membranous, posteriorly with small rounded extension. Sperm duct runs from sac-like reservoir to distal apex of tegulum, thence backwards to posterior end and back to apex; relatively slender embolus looped over 180° in prolateral direction, ending in a very short, small tip.

Female Allotype: Total length: 6.6mm; carapace length: 2.9 mm, width: 2.03 mm; abdomen length: 3.65 mm and width 1.48 mm. Eyes: PME: 0.28 mm and PL: 1.23 mm apart, head width: 1.08 mm.

Prosoma and opisthosoma: Same colour as male. Chelicerae with three pro-marginal and two retro-marginal teeth.

Legs: Spination: femora I-II 3*d 2*p 2*r, III-IV 3*d 1p 1r, tibiae I-II 2*d 1p 1r 220v; III-IV 2*d 2*p 2*r 220v, metatarsi I-II 200d 200v, III 222d 1p 1r 202v, IV 212d 1p 1r 222v. Measurements: Fe I: 3.2 mm, Pa+Ti I: 4.8 mm, Mt I: 2.6 mm, Ta I: 1.2 mm; Fe II: 2.9 mm, Pa+Ti II: 3.8 mm, Mt II: 2.1 mm, Ta II: 1.05 mm; Fe III: 1.9 mm, Pa+Ti III: 2.35 mm, Mt III: 1.7 mm, Ta III: 0.7 mm; Fe IV: 3.45 mm, Pa+Ti IV: 3.7 mm, Mt IV: 2.9 mm, Ta IV: 0.8 mm.

Epigynum (Fig. 10): Entrance openings close to epigastric fold, copulatory ducts strongly sclerotised, in central position between both posterior spermathecal receptacula. Fertilization ducts between anterior and posterior spermathecal receptacula. Anterior receptacula short, conical, separated by slightly less than their diameter; posterior ones larger, subspherical, almost touching.

***Matidia strobbei* VERSTEIRT n. sp.**
(Figs 11-14)

TYPE MATERIAL: Holotype: male: Papua New Guinea: Madang Province, in the center of Baiteta forest (5°01'S, 145°45'E): 18/6/1996 on unknown tree species (AR58); Female Allotype: 30/6/1995 on *Ficus* tree species,

further data as for Holotype (AR22); Paratypes: AR 1 (2♂, 1♀), AR3 (1♂), AR8 (1♀), AR14 (1♂, 2♀), AR17 (1♀), AR18 (1♂, 1♀), AR20 (2♀), AR22 (1♀), AR24 (1♀), AR25-14 (4♂, 4♀), AR27 (1♀), AR29 (1♂, 1♀), AR30 (2♀), AR31 (1♂), AR32 (3♀), AR33 (1♀), AR41 (1♀), AR43 (3♂, 5♀), AR46 (1♀), AR50 (7♂, 3♀), AR52 (2♂), AR54 (2♂), AR55 (1♂), AR56 (1♂, 2♀), AR58 (1♂, 2♀), AR62 (1♀), AR69 (1♂), AR70 (1♂), M2 (2♂, 2♀), M3 (1♂, 1♀), M4 (1♂, 2♀), M5 (2♂, 2♀), M5(5-19) (2♀), M6 (1♀), T1 (2♂, 3♀), T2 (1♂), T4 (2♂), T7 (1♀), T8 (1♀), T9" (1♀), T10 (1♀), T12 (2♀), XA (1♂, 2♀), XB" (1♂), XC (1♂, 4♀), XF (2♂), XG (5♂, 3♀), XI (1♀), XM (1♂).

ETYMOLOGY: Named after Bert Strobbe, beloved husband of the first author.

DIAGNOSIS: Males of this species can be distinguished by the hooked, coiled embolus and its long, needlelike tip (Figs 11-12). Females of this species are recognized by the broad S-shaped copulatory ducts with openings on the proximal side of the epigyne and the small posterior spermathecal receptacula (Fig. 14).

DESCRIPTION:

Male Holotype: Total length: 5.6 mm; carapace length: 2.2 mm, width: 1.5 mm; abdomen length: 3.2 mm and width: 1.15 mm. Eyes: PME: 0.19 mm and PL: 0.6 mm apart, head width: 0.8 mm.

Prosoma and opisthosoma: Brownish-yellow. Chelicerae with three pro-marginal and two retro-marginal teeth.

Legs: Spination: femora I-II 3*d 2*p 2*r, III 3*d 1p, IV 3*d; tibiae I-II 3*d 1p 220v, III-IV 2*d 2*p 2*r 220v; metatarsi I-II 200d 200v, III 212d 2*p 1r 202v, IV (2-2-01-10-01)d 1p 1r (01-10-2-2)v. Measurements: Fe I: 3.45 mm, Pa+Ti I: 4.85 mm, Mt I: 2.95 mm, Ta I: 1.7 mm; Fe II: 2.95 mm, Pa+Ti II: 4.3 mm, Mt II: 2.45 mm, Ta II: 1.2 mm; Fe III: 1.8 mm, Pa+Ti III: 2.3mm, Mt III: 1.6 mm, Ta III: 0.55 mm; Fe IV: 3.3 mm, Pa+Ti IV: 3.65 mm, Mt IV: 3.5 mm, Ta IV: 0.7 mm.

Pedipalp (Figs 12-13): Tibial apophysis broad at tip. Cymbium long, setose, with rounded tip, long, setose. Tegulum oval, Subtegulum membranous, emerging on prolatateral side of tegulum. Sperm duct long, running from ampuliform reservoir, towards anterior apex of tegulum, thence backward to posterior end and back to anterior apex. Embolus hooked, roughly triangular, looped over 180°, ending in long, slender, needlelike tip.

Female Allotype: Total length: 7.5 mm; carapace length:

2.73 mm, width: 1.93 mm; abdomen length: 4.7 mm and width: 1.88 mm. Eyes: PME: 0.23 mm and PL: 0.58 mm apart, head width: 0.93 mm.

Prosoma and opisthosoma: Yellow, sometimes more brownish, especially chelicerae. Chelicerae with three pro-marginal and two retro-marginal teeth.

Legs: Spination: femora I-III 3*d 2*p 2*r, IV 3*d 1p 1r; tibiae I-II 2*d 1p 1r 220v, III-IV 2*d 2*p 2*r 220v; metatarsi I-II 200d 200v, III (2-10-10-01-10)d 1p 1r 220v, IV (2-2-10-01-10)d 1p (2-01-10-2)v. Measurements: Fe I: 3.2 mm, Pa+Ti I: 4.8 mm, Mt I: 2.75 mm, Ta I: 1.4 mm; Fe II: 2.8 mm, Pa+Ti II: 4.3 mm, Mt II: 2.6 mm, Ta II: 1.33 mm; Fe III: 2.2 mm, Pa+Ti III: 2.6 mm, Mt III: 2.05 mm, Ta III: 0.83 mm; Fe IV: 3.45 mm, Pa+Ti IV: 3.6 mm, Mt IV: 3.8 mm, Ta IV: 0.95 mm.

Epigynum (Figs 11, 14): Wide copulatory openings clearly separated by mesal septum; broad copulatory ducts follow 8-shaped course before entering posterior spermathecal receptacula on mesal side. Fertilization ducts situated in between receptacula, run backward. Both receptacula spherical, posterior pair slightly larger than anterior pair, separated by approximately twice their diameter. Anterior receptacula with fingerlike lateral extension. Without central depression.

Arabellata BAERT, VERSTEIRT & JOCQUÉ n. gen.

Type species: *Arabellata nimispalpata* BAERT, VERSTEIRT & JOCQUÉ

ETYMOLOGY: The genus name is derived from “ARABEL”, acronym of the Belgian Arachnological Society which celebrated its 30th anniversary in 2006, as a tribute to all former and present members.

DIAGNOSIS: Very long, slender and pale, almost transparent, spiders, distinct from all other clubionids by the position of the eyes, the size of the teeth on the chelicerae, the ventral spination of tibiae I and II and the structure of pedipalps and epigyne (Figs 15-16).

Arabellata species are very similar to some of the *Matidia* described in the present study but differ by the leg spination and by the shape of the structure of the male palp and epigynum.

DESCRIPTION: Greenish, almost transparent spiders with long slender legs, body length 4-5 mm, legs up to three 3 times total body length, carapace 1.5-2.0 times as wide as cephalic part just behind posterior eyes; with sinuous lateral margins. PLE close to lateral margin; PME close

to centre; PLE/PME = 2.0. Fovea absent. Femora II-IV without prolateral spines and 0-1 retrolateral spines; tibiae I and II with 4-6 pairs of ventral spines, two dorsal spines and without post- and retrolateral spines. Cheliceral teeth very small, three teeth on promargin and two knob like teeth on retromargin. Pedipalp with rather thin, long embolus, originating near posterior margin of tegulum, coiled around tegulum, or sinuous. Epigyne with small copulatory openings, small receptacula and short fertilization ducts.

DISTRIBUTION: Only known from Papua New Guinea.

HABITAT: Apparently very cryptic, canopy dwelling species.

Arabellata nimispalpata

BAERT, VERSTEIRT & JOCQUÉ n. sp.
(Figs 18-21)

TYPE MATERIAL: Papua New Guinea: Madang Province, in the center of Baiteta forest ($5^{\circ}01'S$, $145^{\circ}45'E$): Male Holotype: 18/5/1993 on *Dracontomelum dao* tree (M6); Female Allotype: on *Dracontomelum dao* tree (M6); Paratypes: XI (1♂, 2♀), AR27 (1♂, 1♀).

ETYMOLOGY: The species name is a combination of the Latin “*palpatus*” (= provided with palps) and “*nimir*” = exaggerated, referring to the remarkable structure of the male pedipalps especially that of the elongate embolus and tegulum and the spate-like cymbium. The gender is feminine.

DIAGNOSIS: Males of this species are distinguished by the long spatula like cymbium and tegulum and by the long thin embolus (Figs 18-19). Females are characterized by the broad copulatory openings with spiral lining, turning clockwise on the right side (Fig. 20).

DESCRIPTION:

Male Holotype: Total length: 4.6 mm; carapace length: 1.45 mm, width: 0.98 mm wide; abdomen length: 2.43 mm and width: 0.68 mm. Eyes: PME: 0.16 mm and PL: 0.34 mm apart, head width: 0.54 mm.

Prosoma and opisthosoma: Very pale yellow, almost transparent. Chelicerae with three pro-marginal and two 2 knobshaped retro-marginal teeth.

Legs: Spination: femora I-IV 3*d, tibiae I-II 2222v, III 1v, IV 1d; metatarsi I-II 1d 220v, III 2*v, IV 1d. Measurements: Fe I: Both femora absent; Fe II: 3.1 mm, Pa+Ti II: 4.35 mm, Mt II: 2.6 mm, Ta II: 1.05 mm;

Fe III: 1.78 mm, Pa+Ti III: 2.03 mm, Mt III: 1.55 mm, Ta III: 0.68 mm; Fe IV: 3.05 mm, Pa+Ti IV: 3.3 mm, Mt IV: 2.9 mm, Ta IV: 0.85 mm.

Pedipalp (Figs 18-19): Tibial apophysis small, pointed. Cymbium very elongated, extremely long, small, spatula like; tegulum of similar shape. Sperm duct very long, originating in posterior part of tegulum from saclike reservoir visible in transparency; runs forwards and backwards, thence again to anterior part, then looped, finally running along spate shaped tegulum. Embolus very thin, whip-shaped , with looped tip.

Female Allotype: Total length: 4.75 mm; carapace length: 1.6 mm, width 1.02 mm; abdomen length: 3.05 mm and width: 0.6 mm. Eyes: PME: 0.18 mm and PL: 0.36 mm apart, head width: 0.51 mm.

Prosoma and opisthosoma: Colour as in male; abdomen with rectangular and triangular spots in transparency. Chelicerae with three pro-marginal and two knob-shaped retro-marginal teeth.

Legs: Spination: femora I 3*d 1r, II-IV 3*d, tibiae I 2*d 222222v, II 2*d (2-10-2-10-01-10-01-10)v, III 3*v, IV 1d 2*v, metatarsi I-II 220v, III 210d 211v, IV 3*d 1v. Measurements: Fe I: 3.05 mm, Pa+Ti I: 4.05 mm, Mt I: 2.5 mm, Ta I: 1.15 mm; Fe II: 2.8 mm, Pa+Ti II: 3.1 mm, Mt II: 2.2 mm, Ta II: 1.0 mm; Fe III: 2 mm, Pa+Ti III: 2.05 mm, Mt III: 1.6 mm, Ta III: 0.75 mm; Fe IV: 3.25 mm, Pa+Ti IV: 3.55 mm, Mt IV: 2.85 mm, Ta IV: 0.75 mm .

Epigyne (Figs 20,21): Small, with small copulatory openings, long, spiralling copulatory ducts, turning clockwise on left side ; fertilization ducts short and straight, originating from posterior receptacula. All receptacula kidney shaped, of similar size.

Arabellata terebrata BAERT, VERSTEIRT & JOCQUÉ n. sp.
(Figs 22-25)

TYPE MATERIAL: Holotype: male: Papua New Guinea: Madang Province, in the center of Baiteta forest ($5^{\circ}01'S$, $145^{\circ}45'E$) 19/5/1993 on *Buchanania* tree species (XC), Female Allotype: on *Buchanania* tree species (XC), further data as for holotype; Paratypes: AR64 (1♀), XC (6♂, 8♀).

ETYMOLOGY: The species name is an adjective derived from the Latin *terebrare* (to coil) referring to the coiled embolus, with 2-3 loops.

DIAGNOSIS: Males of this species are distinguished by the long curved sperm duct, the coiled embolus and pointed

tibial apophysis (Figs 22-23). Females are characterized by the funnel shaped copulatory ducts and globular receptacula (Fig. 24).

DESCRIPTION:

Male Holotype: Total length: 4.20 mm; carapace length: 1.70 mm, width: 1.15 mm; abdomen length: 2.23 mm and width: 0.65 mm. Eyes: PME: 0.21 mm and PL: 0.43 mm apart, head width: 0.64 mm.

Prosoma and opisthosoma: Pale yellow. Chelicerae with two pro-marginal teeth and one very small, knoblike retro-marginal tooth.

Legs: Spination: femora I 3*d 2*p 2*r, II 3*d 1r, III-IV 3*d, tibiae I-II 2*d (2-10-01-10-01-01)v, III 1d 1r 2*v, IV 2*d 2*r 2*v; metatarsi I 220v, II (2-01-10)d 2*v, III (2-01-1)d 2*v, IV 221d 2*p 2*r 203v. Measurements: Fe I: 3.0 mm, Pa+Ti I: 4.45 mm, Mt I: 2.65 mm, Ta I: 1.15 mm; Fe II: 2.6 mm, Pa+Ti II: 4.0 mm, Mt II: 2.3 mm, Ta II: 0.8 mm; Fe III: 1.6 mm, Pa+Ti III: 1.65 mm, Mt III: 1.45 mm, Ta III: 0.55 mm; Fe IV: 2.8 mm, Pa+Ti IV: 3.1 mm, Mt IV: 2.85 mm, Ta IV: 0.75 mm.

Pedipalp (Figs 22-23): Small. Tibia with some spines; retrolateral apophysis small, slender, with pointed tip. Cymbium small, slightly longer than wide, with many hairs, without spines. Sperm duct originating from sac like reservoir in posterior part of tegulum, running forward with two short curves, thence backward to posterior margin. Embolus curled, with short, thin tip (thicker than previous species). Sac like structure visible in transparency through membranous subtegular wall.

Female Allotype: Total length: 4.9 mm; carapace length: 1.65 mm, width: 1.13 mm; abdomen length: 3.2 mm and width: 0.95 mm. Eyes: PME: 0.2 mm and PL: 0.4 mm apart, head width: 0.55 mm.

Prosoma and opisthosoma: Coloration as in male. Chelicerae with three pro-marginal and 2 knowlike retro-marginal teeth.

Legs: Spination: femora I 3*d 2*p II-IV 3*d; tibiae I 2*d 222222v, II 2*d 2222v; III 2*d 2*v, IV 2*d 2*r 2*v, metatarsi I-II 220v, III (2-10-01-10)d 202v, IV 2211d (10-01-2-2)v. Measurements: Fe I: 2.9 mm, Pa+Ti I: 3.7 mm, Mt I: 1.95 mm, Ta I: 0.6 mm; Fe II: 2.55 mm, Pa+Ti II: 2.65 mm, Mt II: 1.65 mm, Ta II: 0.75 mm; Fe III: 1.6 mm, Pa+Ti III: 1.63 mm, Mt III: 1.43 mm, Ta III: 0.43 mm; Fe IV: 2.8 mm, Pa+Ti IV: 2.85 mm, Mt IV: 2.35 mm, Ta IV: 0.55 mm.

Epigynum (Figs 24-25): Small, crescent shaped copulatory openings. Copulatory ducts much shorter than in previous species, funnel shaped i.e. narrowed towards end, entering posterior receptacula. Both pairs

of receptacula globular, anterior pair smaller than posterior one. Fertilization ducts short, funnel-shaped, originating mesally from anterior receptacula.

Invexillata n. gen.

Type species: *Invexillata maculata* n. sp.

DIAGNOSIS: Species of *Invexillata*, strongly resemble those of *Malamatidia*, in view of the similar habitus, and the widely separated PME and those of *Pteroneta* with which they share the dorsal spines on the chelicerae, the barbed spines on metatarsi III, the bluish spot on the abdominal venter and the similar structure of the genitalia in males as well as females. They differ from *Malamatidia* species by the dorsal spines, the number of teeth and the position of the bunch of hairs on the chelicerae, and from *Pteroneta* species by the absence of a flag on Ta II, and the presence of three pairs of spines.

DESCRIPTION: Small, slender clubionids with legs only 1-1.5 times total body length. Often with pattern of bluish spots on venter. Legs slender with leg formula 4213 but some variation is possible; three pairs of ventral spines on Ti I and II, one pair of ventral spines on Mt I and II. Metatarsi more than twice as long as tarsi. Ta II without feathered swelling. Mt III with circle of barbed spines at distal end; number of spines species specific. Dorsal side of male chelicerae with variable, but species specific number of spines. Number of teeth on pro- and retromargin variable, usually exceeding four (Fig. 17).

ETYMOLOGY: The genus name (*Invexillata*) is Latin for “without a flag” referring to the difference with the closely related *Pteroneta*, which is derived from the Greek for “having wings”. The gender is feminine.

HABITAT: Found in secondary forest of Papua New Guinea, probably canopy spiders.

DISTRIBUTION: Only known from Papua New Guinea.

TAXONOMIC REMARKS: The structure of the reproductive organs and chelicerae is similar to that of *Pteroneta*, but there are a number of distinct somatic features (such as absence of a flag on Ta II, and the presence of three pairs of spines), highlighted by the cladistic analysis, that justify the erection of a new genus: the absence of a feathery flag on the prolateral surface of Ta II and the absence of a retrolateral group of small spines on Mt IV.

***Invexillata maculata* n. sp.**
(Figs 26-29)

TYPE MATERIAL: Holotype: male: Papua New Guinea: Madang Province, in the center of Baiteta forest ($5^{\circ}01'S$, $145^{\circ}45'E$), 10/6/1993 on *Sloanea sogerensis* tree (XF), Female Allotype: 27/6/1995 on *Sloanea forbesii* tree (AR19), further data as for holotype; Paratypes: AR44 (1♀), AR54 (2♀♀), AR48-1 (1♀), XB (2♀♀), XF (2♂♂, 1♀).

ETYMOLOGY: The species name *maculata* (Latin for spotted) is an adjective referring to the presence of spots on the abdominal venter.

DIAGNOSIS: Males and females of this species have spots on the ventral side of the carapace and abdomen; the number and the shape of the spots is variable. Males of this species are distinguished by the pointed tibial apophysis, by the embolus shape and by the number and position of spines on the chelicerae (Figs 26-27). Females are characterized by the structure of the epigyne: circular posterior receptacula and oval anterior receptacula (Figs 28-29).

DESCRIPTION:

Male Holotype: Total length: 3.98 mm; carapace length: 1.85 mm, width 1.35 mm; abdomen length: 2.13 mm and width 0.85 mm. Eyes: PME: 0.21 mm and PL: 0.48 mm apart, head width: 0.73 mm.

Prosoma and opisthosoma: Pale yellow spiders with characteristic spots on ventral side. Chelicerae with four pro-marginal and three retro-marginal knoblike teeth; dorsal side with 10 proximal spines; a proximal bundle of hairs near the base of the chelicerae.

Legs: Spination: femora I 2*d 1p, II-IV 2*d, tibiae I-II 222v, III 1d (0-10-0)v, IV 2*d 1p 2*r (10-10-0)v; metatarsi I-II 200v, III (10-0-2)d 101v + circle of 9 spines, IV 212d 3*p 3*r 101v. Measurements: Fe I: 0.94 mm, Pa+Ti I: 1.39 mm, Mt I: 0.74 mm, Ta I: 0.36 mm; Fe II: 0.96 mm, Pa+Ti II: 1.36 mm, Mt II: 0.75 mm, Ta II: 0.36 mm; Fe III: 0.84 mm, Pa+Ti III: 0.86 mm, Mt III: 0.54 mm, Ta III: 0.24 mm; Fe IV: 1.29 mm, Pa+Ti IV: 1.75 mm, Mt IV: 1.12 mm, Ta IV: 0.43 mm.

Pedipalp (Figs 26-27): Tibial apophysis broad at base, narrowed in middle, blunt at tip. Sperm duct originating from oval shaped reservoir, running backwards, thence returning to distal at the distal end to the top (180° turn), not curved. Embolus sharp and thin, rather long.

Female Allotype: Total length: 3.7 mm; carapace length: 1.65 mm, width: 1.13 mm; abdomen length: 3.2 mm and

width: 0.95 mm. Eyes: PME: 0.2 mm and PL: 0.4 mm apart, head width: 0.55 mm.

Prosoma and opisthosoma: Colour pattern as in male. Chelicerae with eight very small pro-marginal teeth, six knob shaped retro-marginal teeth; gnathocoxae large, nearly as long as chelicerae; without spines on dorsal side of chelicerae.

Legs: Spination: femora I-IV 2*d; tibiae I-II 222v, III-IV (0-10-0)v, metatarsi I-II 200v, III 101d 101v + circle of 9 (barbed) spines, IV 222d 1p 1r 102v + 3 spines (in circle). Measurements: Fe I: 0.88 mm, Pa+Ti I: 1.09 mm, Mt I: 0.54 mm, Ta I: 0.31 mm; Fe II: 0.96 mm, Pa+Ti II: 1.34 mm, Mt II: 0.63 mm, Ta II: 0.38 mm; Fe III: 0.74 mm, Pa+Ti III: 0.8 mm, Mt III: 0.55 mm, Ta III: 0.3 mm; Fe IV: 1.03 mm, Pa+Ti IV: 1.34 mm, Mt IV: 0.9 mm, Ta IV:

0.36 mm.

Epigynum (Figs 28-29): With sclerotised zone along lateral margin. Copulatory openings of medium size, lying medially of the epigynal fold near anterior margin. Copulatory ducts long, with 2 loops. Anterior receptacula oval, somewhat smaller than the rounded posterior receptacula. Fertilization ducts faint..

***Invexillata caerulea* n. sp.**

(Figs 30-32)

TYPE MATERIAL: Holotype, male: Papua New Guinea: Madang Province, in the center of Baiteta forest ($5^{\circ}01'S$, $145^{\circ}45'E$), 13/7/1996 on unknown tree species (AR65), Female Allotype: 27/6/1995 on *Sloanea forbesii* tree (AR19) further data as for holotype; Paratypes: AR3 (1♂), AR5 (1♀), AR8 (1♀), AR9 (1♀), AR11 (1♀), AR14 (1♀), AR16 (1♀), AR17 (2♀♀), AR18 (9♂♂, 6♀♀), AR22 (1♂), AR23 (1♀), AR24 (1♀), AR26 (3♂♂), AR27 (1♂, 1♀), AR28 (1♀), AR31 (1♂, 2♀♀), AR34 (1♂, 1♀), AR35 (1♀), AR39 (1♂), AR41 (1♀), AR42 (2♂♂, 1♀), AR44 (1♀), AR45 (1♀), AR64 (1♀), AR65 (1♂), AR69 (2♂♂, 5♀♀), XA (1♂), XB (1♀), XO (1♂, 1♀), T3 (3♂♂).

ETYMOLOGY: The species name is an adjective meaning "dark blue" in Latin, and refers to the presence of blue ventral spots.

DIAGNOSIS: Males and females of this species have suffused blue spots on the ventral side of carapace and abdomen. Males of this species are distinguished by the triangular tibial apophysis, by the tegulum with an apical swelling and by the number and position of spines on the chelicerae (Figs 30-31). Females are characterized by the structure of the epigynum (Fig. 32).

DESCRIPTION:

Male Holotype: Total length: 5.9 mm; carapace length: 2.55 mm, width 1.85 mm; abdomen length: 3.35 mm and width 1.35 mm. Eyes: PME: 0.35 mm and PL: 0.73 mm apart, head width: 1.06 mm.

Prosoma and opisthosoma: Yellow, legs brownish; with suffused blue spots ventral side and carapace. Chelicerae with four pro-marginal, and five much smaller retro-marginal teeth, five spines central on dorsal side, with bunch of setae pro-mesally. Fangs small, sharp.

Legs: Spination: femora I-IV 3*d 1p 1r, tibiae I-II 222v, III 1d 1p 1r 1v, IV 2*p 2*r 2*v; metatarsi I-II 200v, III 202d 202v + circle of 9 (barbed) spines, IV 202d 2*p 2*r 202v. Measurements: Fe I: 2.85 mm, Pa+Ti I: 4.1 mm, Mt I: 1.95 mm, Ta I: 0.66 mm; Fe II: 3.25 mm, Pa+Ti II: 4.85 mm, Mt II: 2.3 mm, Ta II: 0.75 mm; Fe III: 1.85 mm, Pa+Ti III: 1.8 mm, Mt III: 1.6 mm, Ta III: 0.5 mm; Fe IV: 2.85 mm, Pa+Ti IV: 3.1 mm, Mt IV: 2.75 mm, Ta IV: 0.75 mm.

Pedipalp (Figs 30-31): Tibial apophysis triangular with broad basis and sharp tip, without spines. Sperm duct originates from funnel shaped reservoir, runs backwards turns 180°, thence to distal tip; short curve before entering pointed, small embolus. Tegulum with a blunt swelling at distal end; subtegulum small.

Female Allotype: Total length: 3.7 mm; carapace length: 1.18 mm, width: 0.34 mm; abdomen length: 1.95 mm and width: 0.93 mm. Eyes: PME: 0.18 mm and PL: 0.45 mm apart, head width: 0.64 mm.

Prosoma and opisthosoma: Colour as in male; venter with dark spot on each side of epigyne. Chelicerae with eight pro-marginal and seven knoblike retro-marginal teeth; with large bunch of setae at distal end.

Legs: Spination: femora I-IV 2*d; tibiae I-II 222v, III 1d, IV 202d 102v, metatarsi I-II 200v, III 2*d 2*p 2*r (10-10-0)v + circle of 10 spines, IV 202d 2*p 2*r 102v. Measurements:

Fe I: 0.88 mm, Pa+Ti I: 1.09 mm, Mt I: 1.95 mm, Ta I: 0.6 mm; Fe II: 2.55 mm, Pa+Ti II: 2.65 mm, Mt II: 1.65 mm, Ta II: 0.75 mm; Fe III: 1.6 mm, Pa+Ti III: 1.63 mm, Mt III: 1.43 mm, Ta III: 0.43 mm; Fe IV: 2.8 mm, Pa+Ti IV: 2.85 mm, Mt IV: 2.35 mm, Ta IV: 0.55 mm.

Epigynum (Fig. 32): With suffused blue spot on each side. Copulatory openings of medium size, lying medially of the epigynal fold. Copulatory ducts straight, leading directly into large, oval, frontal receptacula. Posterior receptacula small, circular. The fertilization ducts straight, short.

Invexillata viridiflava n. sp.

(Figs 33-35)

TYPE MATERIAL: Holotype: male: Papua New Guinea: Madang Province, in the center of Baiteta forest (5°01'S, 145°45'E): 28/6/1995 on *Ficus polyantha* tree (AR20), Female Allotype: 6/4/1993 on *Pometia pinnata* tree (T4), further data as for holotype; Paratypes: AR20 (2♀♀), AR24 (1♀), AR34 (1♂), AR64 (1♀), AR70 (1♀), XF (1♀).

ETYMOLOGY: The species name is an adjective meaning yellowish green in Latin (*viridiflavus*).

DIAGNOSIS: Males of this species are distinguished by the rectangular cymbium, the long, pointed tibial apophysis and by the number and position of spines on the chelicerae (Figs 33-34). Females are characterized by the structure of the epigynum (Fig. 35).

DESCRIPTION:

Male Holotype: Total length: 3.53 mm; carapace length: 1.68 mm, width: 1.35 mm; abdomen length: 1.85 mm and width: 0.88 mm. Eyes: PME: 0.25 mm apart, PL: 0.5 mm and head width: 0.75 mm.

Prosoma and opisthosoma: Pale yellowish green with darker pattern proximally on venter. Chelicerae with seven pro-marginal and seven retro-marginal teeth, the latter small, knob like; five small spines central on dorsal side, bunch of setae near base.

Legs: Spination: femora I 2*d 1p (p = variable), II-IV: 2*d; tibiae I-II 222v, III 1v, IV 2*p 2*r 1v; metatarsi I-II 200v, III 2-1d 202v + circle of 7 (barbed) spines, IV 1p 1r (0-1-2)v. Measurements: Fe I: 0.98 mm, Pa+Ti I: 1.3 mm, Mt I: 0.61 mm, Ta I: 0.38 mm; Fe II: 1.04 mm, Pa+Ti II: 1.08 mm, Mt II: 0.8 mm, Ta II: 0.4 mm; Fe III: 0.8 mm, Pa+Ti III: 0.93 mm, Mt III: 0.61 mm, Ta III: 0.28 mm; Fe IV: 1.15 mm, Pa+Ti IV: 1.21 mm, Mt IV: 0.86 mm, Ta IV: not present. (Remark legs: left side because of poor state of right side legs, only 1 male found).

Pedipalp (Figs 33-34): Tibial apophysis strong, long, with straight extremity. Cymbium rectangular with flattened top. Tegulum rectangular. Sperm duct originates from funnel shaped reservoir, runs backwards, turns 180°, thence forward in broad curve Embolus rather long, pointed.

Female Allotype: Total length: 3.3 mm; carapace length: 1.15 mm, width: 0.33 mm; abdomen length: 1.8 mm and width 0.9 mm. Eyes: PME: 0.23 mm apart, PL: 0.44 mm and head width: 0.63 mm.

Prosoma and opisthosoma: Entirely yellow with greenish hue. Chelicerae with seven pro-marginal and seven knob like retro-marginal teeth; large labium same size as chelicerae (without fangs).

Legs: Spination: femora I-IV 2*d; tibiae I-II 222v, III 1d 1v, IV 1d 2*p 2*r 1v, metatarsi I-II 200v, III 202d 202v + circle of 8 (barbed) spines, IV 202d 2*p 2*r 102v. Measurements: Fe I: 0.89 mm, Pa+Ti I: 1.0 mm, Mt I: 0.53 mm, Ta I: 0.33 mm; Fe II: 0.91 mm, Pa+Ti II: 1.3 mm, Mt II: 0.61 mm, Ta II: 0.41 mm; Fe III: 0.7 mm, Pa+Ti III: 0.76 mm, Mt III: 0.58 mm, Ta III: 0.33 mm; Fe IV: 0.94 mm, Pa+Ti IV: 1.35 mm, Mt IV: 0.99 mm, Ta IV: 0.39 mm.

Epigynum (Fig. 35): Copulatory openings large, lying medially of epigynal fold. Copulatory ducts wide, curved near centre of epigyne. Anterior receptacula large, oval, separated from smaller, globular, posterior receptacula.

Discussion

The present study highlights the fact that the fauna of Papua New Guinea, and certainly its canopy fauna, is very poorly known even at a supraspecific level. In view of Deeleman-Reinhold's (2009) statement about small scale distribution of canopy dwelling spiders in South East Asia, the present contribution is only a start and many more species are to be expected.

The phylogeny of the taxa considered in this study reveals that the relationships of the former Clubionidae s.l., is far from resolved. Mainly the position of genera that are, apparently temporarily, placed in the Miturgidae casts doubt on their current status but also the division of the clubionid subfamilies is far from clear. It is hoped that molecular studies will help to resolve these systematic problems. However, recent studies that analyse higher level relationships in spiders, show that taxa without any morphological similarities may be closely related (MILLER ET AL. 2010) at least when the molecular data are to be trusted. In their study they find a clear molecular relationship between the newly established family Penestomidae and the Zodariidae although these taxa do not share a single morphological autapomorphy, apart perhaps for the central placement of the major ampullate gland spigot on the anterior lateral spinnerets. It therefore remains meaningful to establish phylogenies, based on morphological characters.

Acknowledgements

We would like to thank Christa Deeleman-Reinhold first of all for the tremendous help during the initial stages of the study, identification of the species and matching of males and females as well as for the loan of material and the many discussions and suggestions, and not to forget, the nice suppers! We are very grateful to Dr Olivier Missa for the fogging samples and to all the technicians of the Christensen Research Institute, Papua New Guinea for their assistance in the field. Many thanks to Domir De Bakker for sorting out the material and other preparatory work. The authors thank Christine Rollard for the loan of the type specimens described by Simon. We would like to thank Desmond Kime for proofreading the manuscript. Thanks to Belspo (POD Wetenschapsbeleid) for funding the research.

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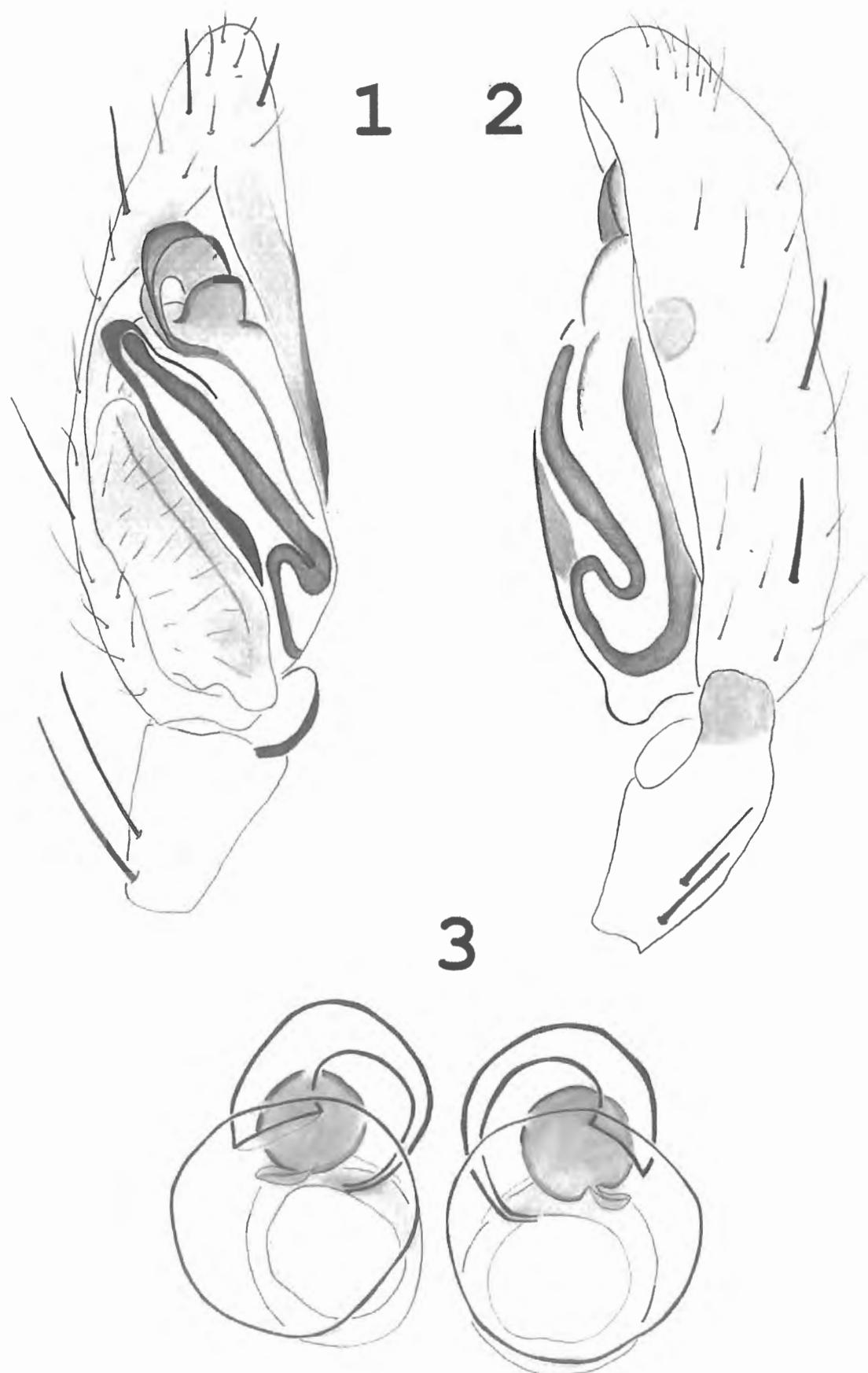
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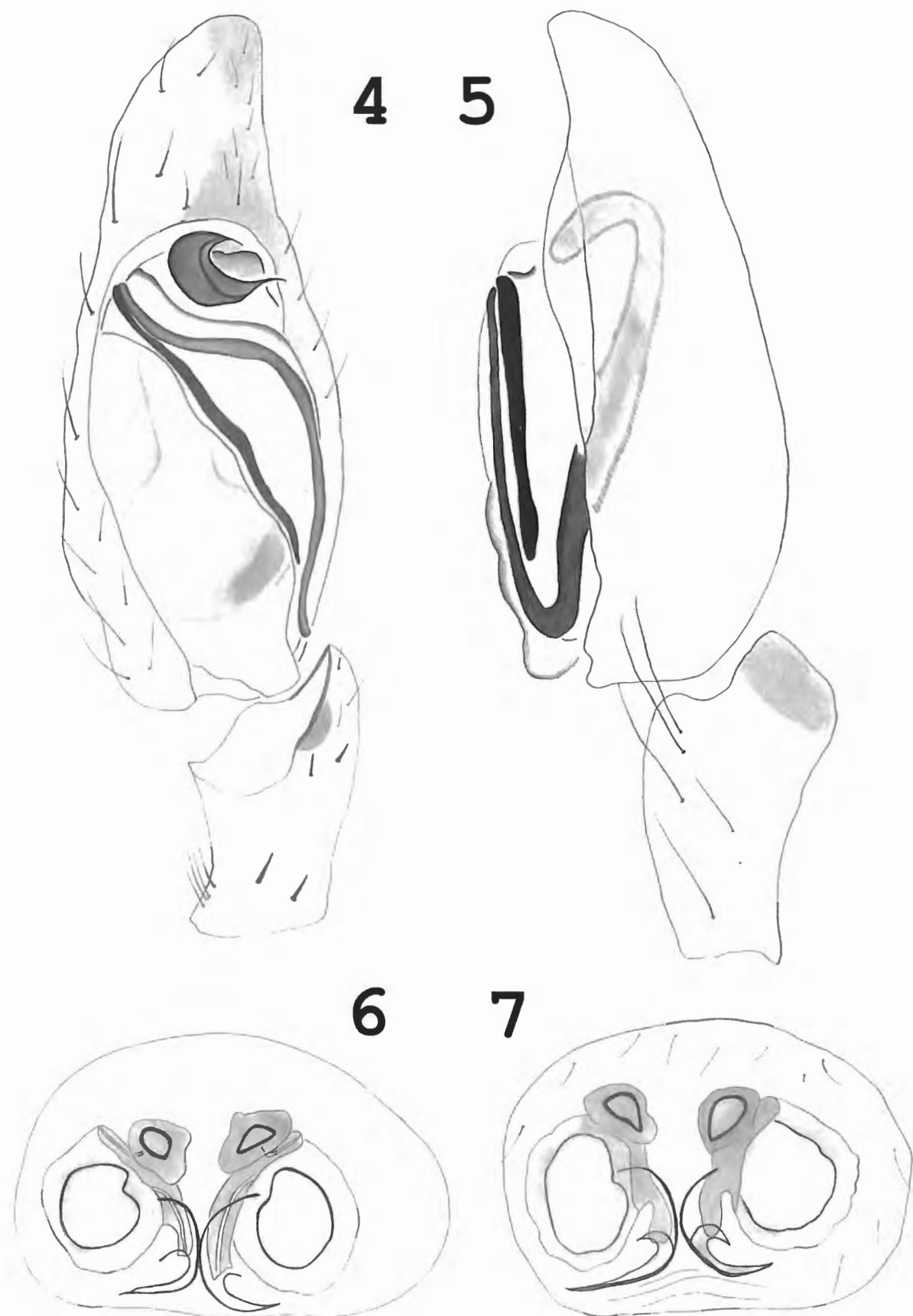
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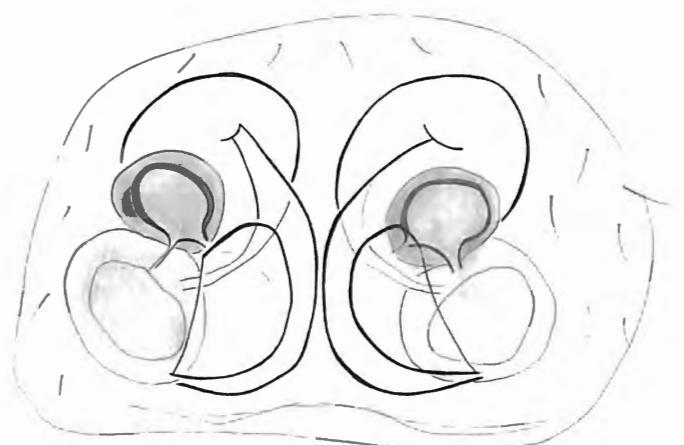
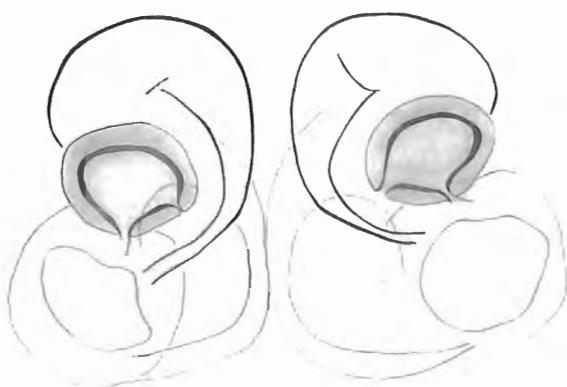
Figs 1-3. – *Matidia muju* CHRYSANTHUS, 1967. 1. Male palp, ventral view. 2. Male palp, retro-lateral view. 3. Epigyne, ventral view.



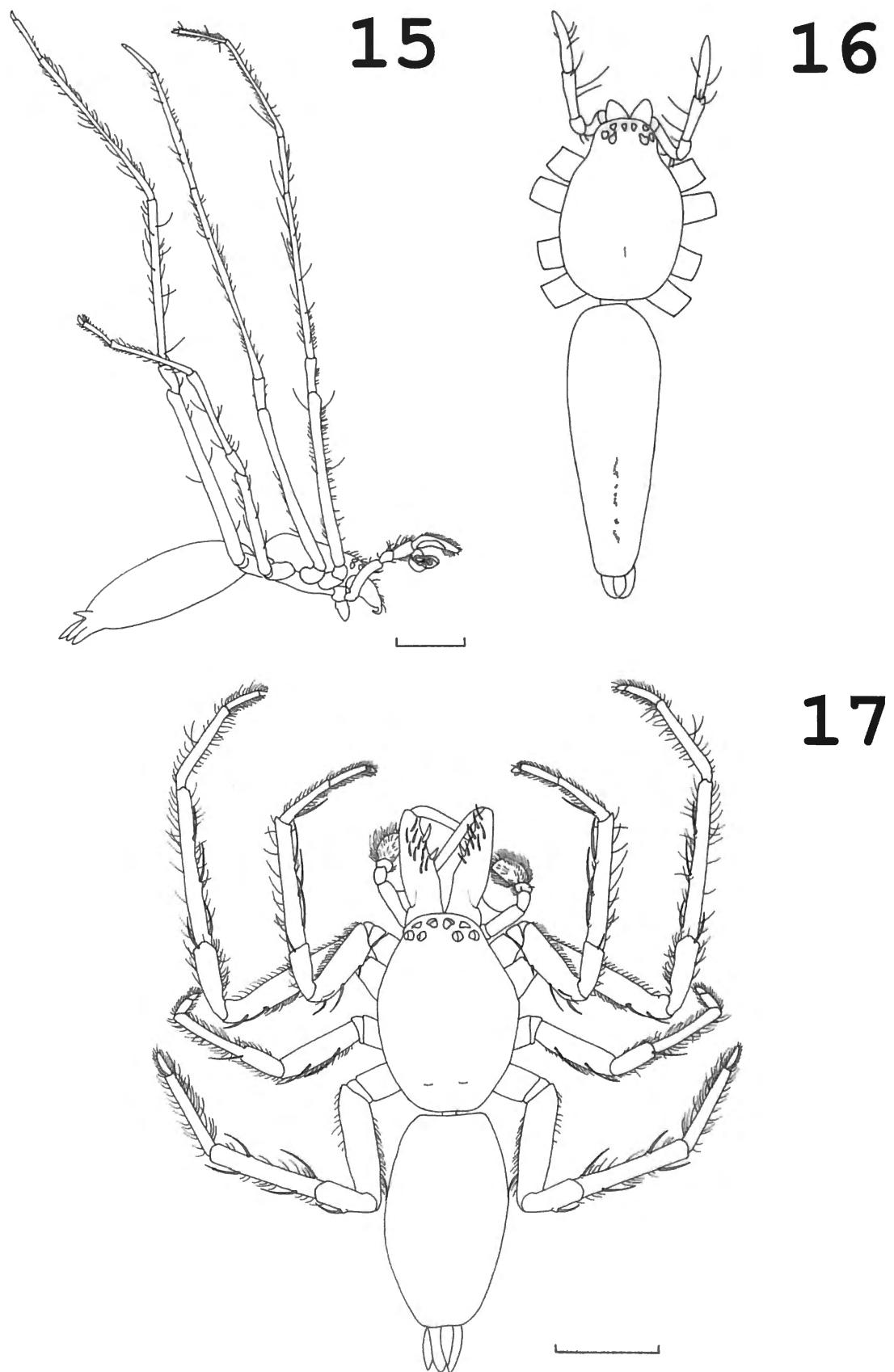
Figs 4-7. — *Matidia chlorae* CHRYSANTHUS, 1967. 4. Male palp, ventral view. 5. Male palp, retro-lateral view. 6. Epigyne, ventral view. 7. Epigyne, dorsal view.



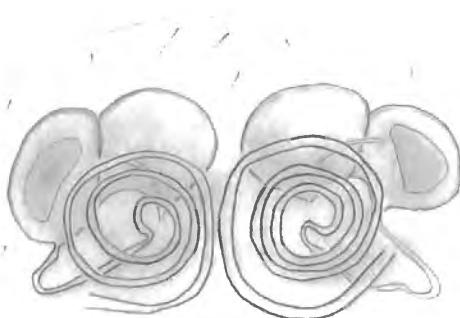
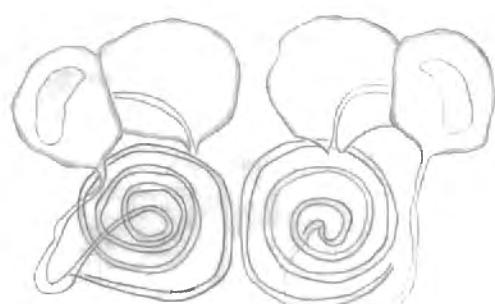
Figs 8-10. – *Matidia missai* n.sp. 8. Male palp, ventral view. 9. Male palp, retro-lateral view. 10. Epigyne, ventral view.

**11****13****12****14**

Figs 11-14. – *Matidia strobbei* n.sp. 11. Epigyne, dorsal view. 14. Epigyne, ventral view. 12. Male palp, retrolateral view. 13. Male palp, ventral view.



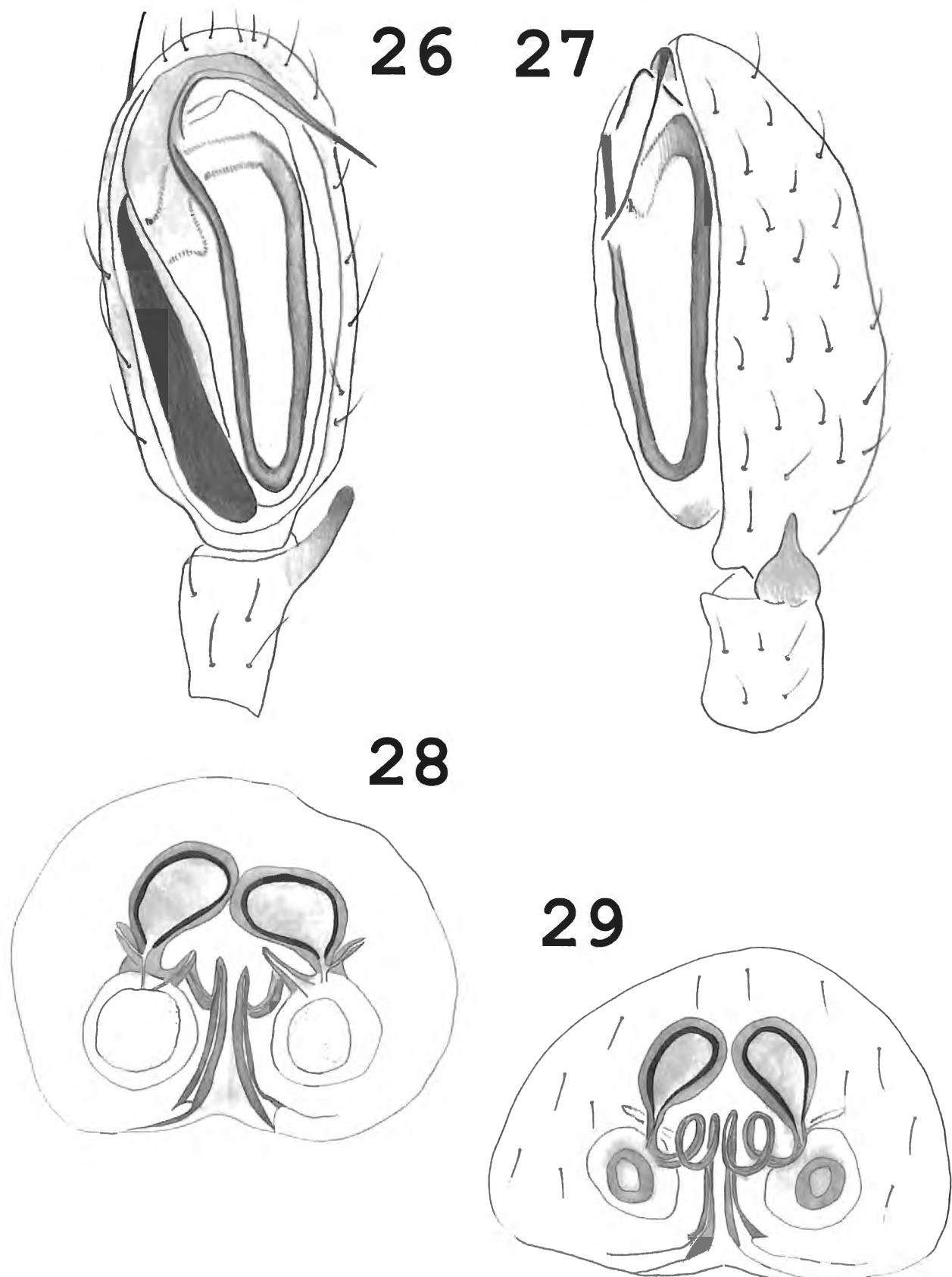
Figs 15-17. – *Arabellata* n.gen. 15. lateral view. 16. dorsal view. *Invexillata* n.gen. 17. dorsal view.

**18****19****20****21**

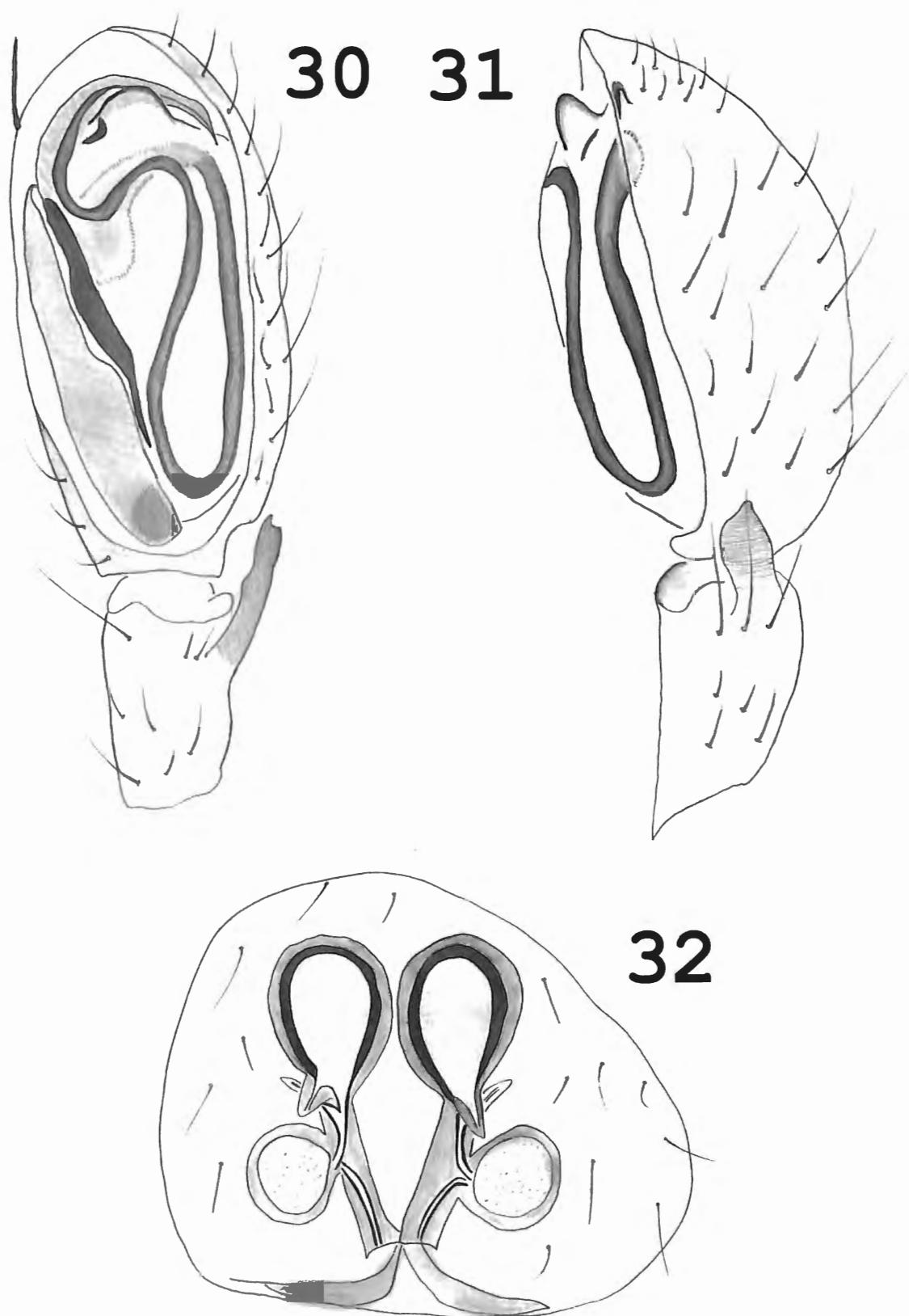
Figs 18-21. – *Arabellata* n.gen. *nimispalpata* n.sp. **18**. Male palp, ventral view. **19**. Male palp, pro-lateral view. **20**. Epigyne, dorsal view. **21**. Epigyne, ventral view.



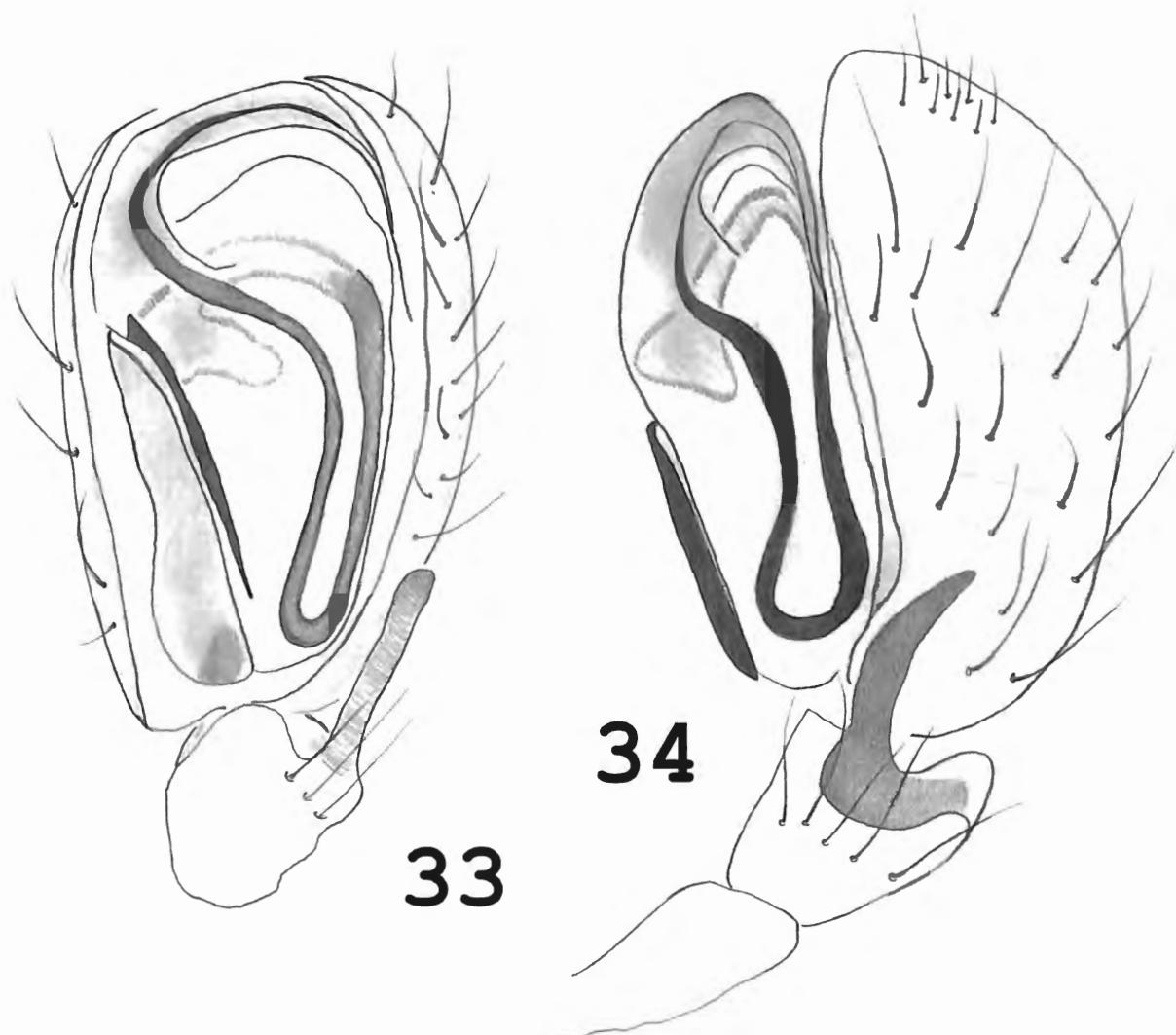
Figs 22-25. – *Arabellata* n.gen. *terebrata* n.sp. 22. Male palp, ventral view. 23. Male palp, retro-lateral view. 24. Epigyne, dorsal view. 25. Epigyne, ventral view.



Figs 26-29. – *Invexillata* n.gen. *maculata* n.sp. 26. Male palp, ventral view. 27. Male palp, retro-lateral view. 28. Epigyne, dorsal view. 29. Epigyne, ventral view.



Figs 30-32. – *Invexillata* n.gen. *caerulea* n.sp. 30. Male palp, ventral view. 31. Male palp, retro-lateral view. 32. Epigyne, ventral view.



Figs 33-35. – *Invexillata* n.gen. *viridiflava* n.sp. 33. Male palp, ventral view. 34. Male palp, retro-lateral view. 35. Epigyne, ventral view.

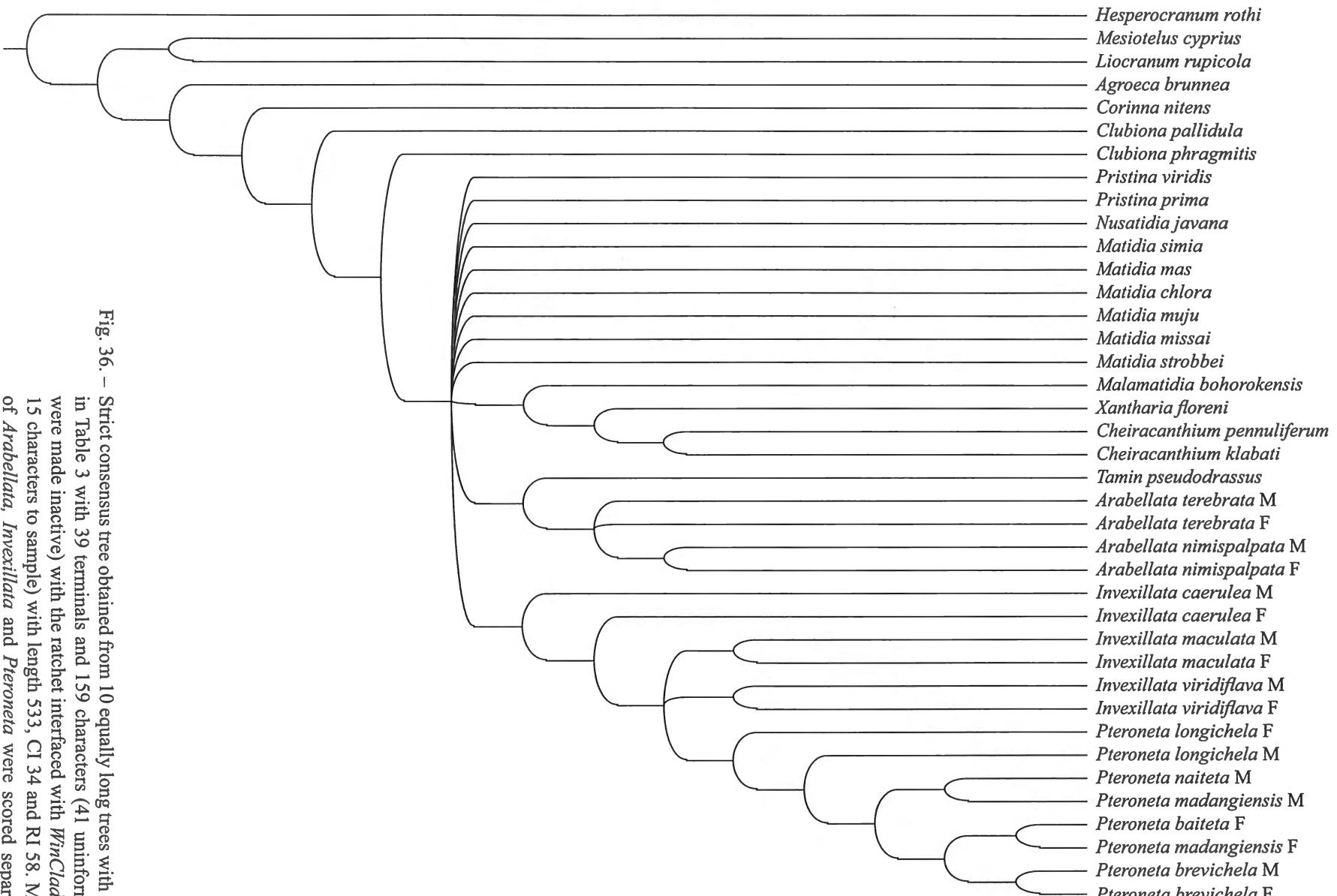


Fig. 36. – Strict consensus tree obtained from 10 equally long trees with the matrix shown in Table 3 with 39 terminals and 159 characters (41 uninformative characters were made inactive) with the ratchet interfaced with *WinClada* (200 iterations, 15 characters to sample) with length 533, CI 34 and RI 58. Males and females of *Arabellata*, *Invexillata* and *Pteroneta* were scored separately in order to corroborate the matching of the sexes that was done carried out on the base of other criteria (see text).

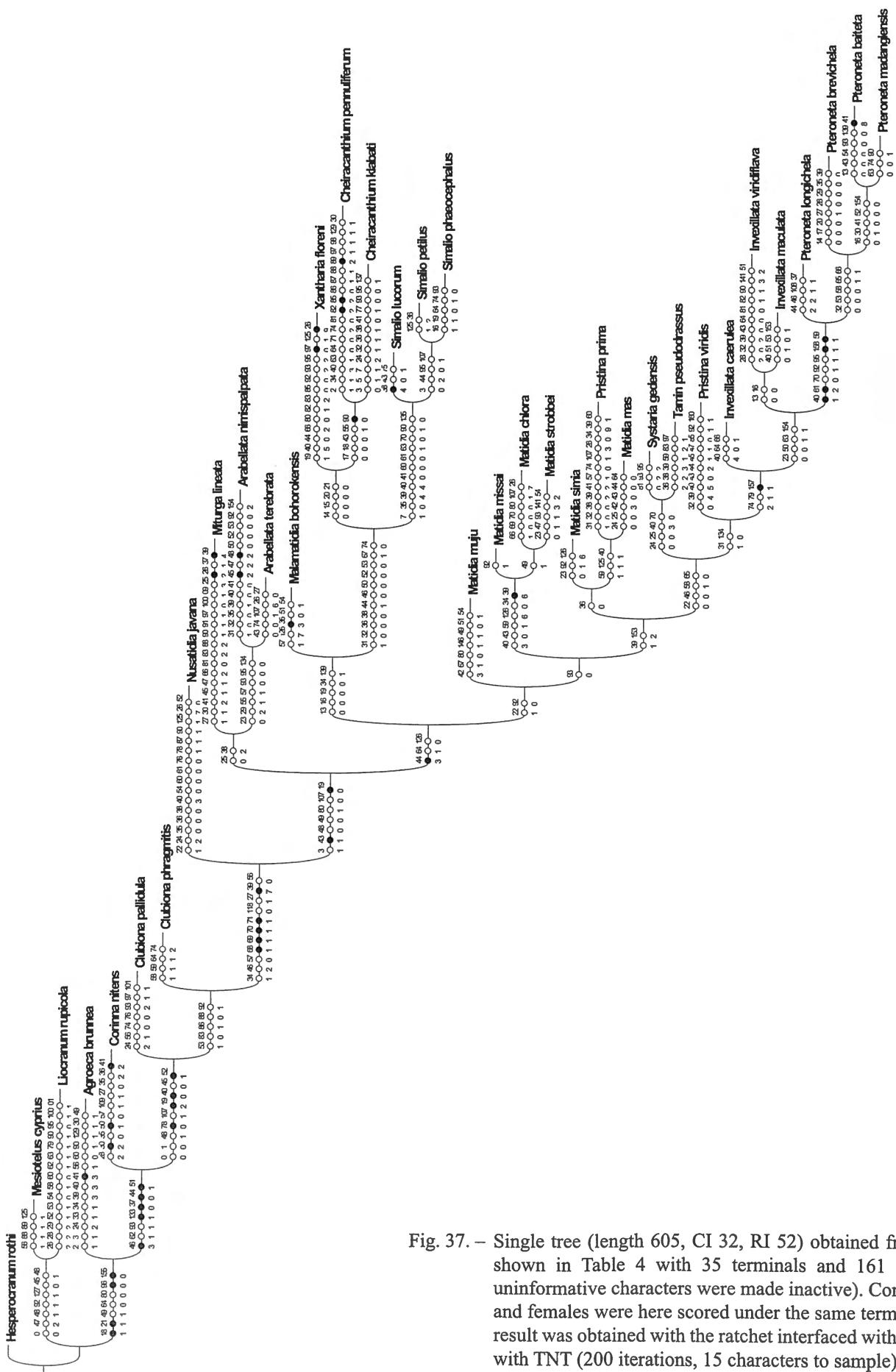


Fig. 37. – Single tree (length 605, CI 32, RI 52) obtained from the matrix shown in Table 4 with 35 terminals and 161 characters (36 uninformative characters were made inactive). Conspecific males and females were here scored under the same terminal. The same result was obtained with the ratchet interfaced with *WinClada* and with TNT (200 iterations, 15 characters to sample).

Table 1. – List of sampled trees where the *Matidia*, *Arabellata* n.gen. and *Invexillata* n.gen. species were sampled.

Code	Date	Tree species	Code	Date	Tree species
AR1	27/04/1995	<i>Spondias</i> spec. (Anacardiaceae)	AR55	6/06/1996	No tree species known
AR3	4/05/1995	<i>Dysoxylum arnoldianum</i> (Meliaceae)	AR56	7/06/1996	No tree species known
AR5	10/05/1995	<i>Chisocheton ceramicus</i> (Meliaceae)	AR57	12/06/1996	No tree species known
AR8	25/05/1995	<i>Planchonella thyoides</i> (Sapotaceae)	AR58	18/06/1996	No tree species known
AR9	26/05/1995	<i>Terminalia sepikana</i> (Combretaceae)	AR62	3/07/1996	No tree species known
AR11	6/06/1995	<i>Celtis philippinensis</i> (Ulmaceae)	AR64	12/07/1996	No tree species known
AR12	8/06/1995	<i>Hapholobus</i> spec. (Burseraceae)	AR65	13/07/1996	No tree species known
AR14	14/06/1995	<i>Chisocheton ceramicus</i> (Meliaceae)	AR68	23/07/1996	No tree species known
AR15	15/06/1995	<i>Terminalia sepikana</i> (Combretaceae)	AR69	24/07/1996	No tree species known
AR16	16/06/1995	<i>Celtis philippinensis</i> (Ulmaceae)	AR70	25/07/1996	No tree species known
AR17	21/06/1995	<i>Celtis latifolia</i> (Ulmaceae)	M1	22/06/1993	<i>Dracontomelum dao</i> (Anacardiaceae)
AR18	22/06/1995	<i>Neonauclea</i> spec. (Rubiaceae)	M1"	29/06/1994	<i>Dracontomelum dao</i> (Anacardiaceae)
AR19	27/06/1995	<i>Sloanea forbesii</i> (Elaeocarpaceae)	M2	30/03/1993	<i>Dracontomelum dao</i> (Anacardiaceae)
AR20	28/06/1995	<i>Ficus polyantha</i> (Moraceae)	M3	7/04/1993	<i>Dracontomelum dao</i> (Anacardiaceae)
AR22	30/06/1995	<i>Ficus</i> spec. (Moraceae)	M4	22/04/1993	<i>Dracontomelum dao</i> (Anacardiaceae)
AR23	4/07/1995	<i>Syzygium</i> spec. (Myrtaceae)	M5	12/05/1993	<i>Dracontomelum dao</i> (Anacardiaceae)
AR24	5/07/1995	<i>Celtis philippinensis</i> (Ulmaceae)	M6	18/05/1993	<i>Dracontomelum dao</i> (Anacardiaceae)
AR25-14	6/07/1995	<i>Homalium foetidum</i> (Flacourtiaceae)	M8	26/05/1994	<i>Dracontomelum dao</i> (Anacardiaceae)
AR26	7/07/1995	<i>Maniltoa psylogyne</i> (Caesalpiniaceae)	M9	2/06/1994	<i>Dracontomelum dao</i> (Anacardiaceae)
AR27	11/07/1995	<i>Vitex cofassus</i> (Verbenaceae)	M10	14/06/1994	<i>Dracontomelum dao</i> (Anacardiaceae)
AR28	12/07/1995	<i>Chisocheton wenlandia</i> (Meliaceae)	T1	16/03/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR29	13/07/1995	<i>Dysoxylum patigravianum</i> (Meliaceae)	T2	24/06/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR30	14/07/1995	<i>Neonauclea</i> spec. (Rubiaceae)	T3	31/03/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR31	18/07/1995	<i>Mangifera minor</i> (Anacardiaceae)	T4	6/04/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR32	19/07/1995	<i>Dillenia papuana</i> (Dilleniaceae)	T5	21/04/1995	<i>Pometia pinnata</i> (Sapindaceae)
AR33	20/07/1995	<i>Celtis latifolia</i> (Ulmaceae)	T7	6/05/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR34	21/07/1995	<i>Celtis latifolia</i> (Ulmaceae)	T8	2/06/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR35	26/07/1995	<i>Pteleocarpus indicus</i> (Fabaceae)	T9	8/06/1993	<i>Pometia pinnata</i> (Sapindaceae)
AR38-2	2/08/1995	<i>Dysoxylum patigravianum</i> (Meliaceae)	T9"	1/06/1994	<i>Pometia pinnata</i> (Sapindaceae)
AR39	4/08/1995	<i>Neonauclea</i> spec. (Rubiaceae)	T10	3/03/1994	<i>Pometia pinnata</i> (Sapindaceae)
AR40-20	3/08/1995	<i>Artocarpus incisus</i> (Moraceae)	T11	20/04/1994	<i>Pometia pinnata</i> (Sapindaceae)
AR41	2/04/1996	No tree species known	T12	8/06/1994	<i>Pometia pinnata</i> (Sapindaceae)
AR42	12/04/1996	No tree species known	XA	9/04/1993	<i>Horsfieldia</i> spec. (Myristicaceae)
AR43	17/04/1996	No tree species known	XB	13/05/1993	<i>Chisocheton wenlandii</i> (Meliaceae)
AR44	18/04/1996	No tree species known	XB"	28/06/1994	<i>Chisocheton wenlandii</i> (Meliaceae)
AR45	25/04/1996	No tree species known	XC	19/05/1993	<i>Buchanania</i> spec. (Anacardiaceae)
AR46	26/04/1996	No tree species known	XD	3/06/1993	<i>Ficus</i> spec. (Moraceae)
AR48	/1996	No tree species known	XF	10/06/1993	<i>Sloanea sogerensis</i> (Elaeocarpaceae)
AR49	/1996	No tree species known	XG	15/03/1994	<i>Sloanea sogerensis</i> (Elaeocarpaceae)
AR50	9/05/1996	No tree species known	XI	6/04/1994	unidentified (but distinct from others)
AR52	17/05//1996	No tree species known	XM	28/04/1994	<i>Aglaia sapindina</i> (Meliaceae)
AR54	3/06/1996	No tree species known	XO	4/05/1994	<i>Pometia pinnata</i> (Sapindaceae)

Table 2. – Characters added to character list of BOSSELAERS & JOCQUÉ (2002).

158 = MtIII with distal ventrolateral circle of spines (0 = absent, 1 = present)

159 = MtIV with retrolateral group of small spines (0 = absent, 1 = present)

160 = TaII in males lengthened and with a feathery flag on prolateral surface, extending over almost entire length (0 = absent, 1 = present)

161 = MtIII with a distal bunch of setae (0 = absent, 1 = present)

Table 3. – Character matrix used for Fig. 36. Males and females are scored separately as different terminals for the ingroup taxa. For taxon abbreviations see text. For characters 1-157: see BOSSELAERS & JOCQUÉ (2002), for additional characters 158-159: see Table 2 (no difference in between sexes for characters 160 and 161).

Species / character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
<i>Hesperocranum rothi</i>	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	[01]	
<i>Mesiotelus cyprius</i>	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	1	0	0	1	0	0	1	0	0	1	1	0	1	2						
<i>Liocranum rupicola</i>	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	2	0	2	0	0	1	0	0	1	1	0	1	[23]							
<i>Corinna nitens</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0	[01]0	0	1	0	2	[01]2	0	1	0	0	0	2	0	2	2				
<i>Clubiona pallidula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	0	1	2	1	1	0	1	1	0	0	1	1	0	1	2					
<i>Clubiona phragmitis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	0	1	0	1	1	0	1	0	0	1	1	0	1	2						
<i>Agroeca brunnea</i>	1	1	1	1	-	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	0	1	2	1	1	0	1	1	1	1	1	1	2	0	2	3				
<i>Xantharia floreni</i>	0	-	0	1	-	0	1	0	0	0	0	0	0	0	1	1	1	0	0	-	1	[01]1	0	0	-	0	0	1	0	-	0	1	0	0	2					
<i>Pristina viridis</i>	0	-	0	1	-	1	0	1	0	0	0	0	0	1	1	1	1	1	1	1	-	1	2	1	1	0	-	1	0	1	0	1	1	4						
<i>Pristina prima</i>	0	0	0	1	-	0	0	[01]0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	1	1	0	1	1	1	0	0	0	2					
<i>Nusatidia javana</i>	0	0	[01]0	-	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	1	1	1	1	0	0	0	0	0	2					
<i>Cheiracanthium pennuliferum</i>	0	-	1	1	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1	0	0	1	0	-	1	1	0	-	0	2							
<i>Cheiracanthium klabati</i>	0	0	0	0	-	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	1	0	1	1	0	1	2							
<i>Tamin pseudodrassus</i>	-	0	0	1	-	1	0	1	-	0	0	0	0	1	1	1	1	1	1	1	0	-	0	0	-	1	1	0	0	1	2	0	2	3						
<i>Matidia simia</i>	0	-	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	-	0	2	1	1	0	-	1	0	-	1	1	0	-	1	1				
<i>Matidia mas</i>	0	-	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	-	1	0	0	1	0	-	1	1	0	-	1	1							
<i>Malamatidia bohorokensis</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	1	1	0	1	1	0	0	0	1	1	0	0	1	1	0	1	1	0	1	2							
<i>Matidia chlora</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	1	1	0	1	1	1	0	1	2						
<i>Matidia muju</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	2	1	1	0	0	1	1	1	1	0	1	2						
<i>Matidia missai</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	1	1	1	1	1	0	1	1	2						
<i>Matidia strobbei</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	2	1	1	0	1	0	1	1	1	0	1	2						
<i>Arabellata nimispalpata</i> M	0	-	0	1	0	?	?	?	?	0	0	0	0	1	1	1	1	1	1	1	-	0	0	0	0	-	2	0	1	0	-	1	0	2	0	2	1			
<i>Arabellata nimispalpata</i> F	-	0	0	1	0	?	?	?	?	-	0	0	0	0	1	1	1	1	1	1	0	-	0	0	-	-	2	2	0	1	0	0	1	-	2	0	2	2		
<i>Arabellata terebrata</i> M	0	-	0	1	0	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	-	0	0	0	2	0	-	2	0	0	1	-	1	1	2					
<i>Arabellata terebrata</i> F	-	0	0	1	0	0	0	1	-	0	0	0	0	1	1	1	1	1	1	1	0	-	0	0	-	-	2	2	0	0	1	1	-	2	0	2				
<i>Invexillata caerulea</i> M	0	-	0	1	-	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	-	1	2	1	1	0	-	1	0	1	1	-	0	1	1					
<i>Invexillata caerulea</i> F	-	0	0	1	-	0	0	1	-	0	0	0	0	0	1	1	0	1	1	1	0	-	2	1	1	-	1	1	0	1	1	0	-	1	0	1				
<i>Invexillata viridiflava</i> M	0	-	0	1	-	0	0	1	0	0	0	0	0	1	1	0	1	1	1	1	-	0	2	1	1	0	-	1	0	1	0	-	1	1	0	1				
<i>Invexillata viridiflava</i> F	-	0	0	1	-	0	0	1	-	0	0	0	0	0	1	1	0	1	1	1	0	-	2	1	0	-	1	0	1	0	1	0	-	1	0	1				
<i>Invexillata maculata</i> M	0	-	0	1	-	0	0	1	0	0	0	0	0	1	1	0	1	1	0	1	1	-	0	2	1	1	0	-	1	0	1	1	-	1	1					
<i>Invexillata maculata</i> F	-	0	0	1	-	0	0	1	-	0	0	0	0	0	1	1	0	1	1	1	0	-	2	1	1	-	1	1	0	1	1	0	-	1	0	1				
<i>Pteroneta longichela</i> M	0	-	0	1	-	-	1	0	0	0	0	0	0	1	1	1	1	1	1	1	-	0	1	1	1	0	-	1	0	1	1	0	-	1	0	1				
<i>Pteroneta longichela</i> F	-	0	0	1	-	-	1	-	0	0	0	0	0	1	1	0	1	1	1	1	0	-	1	1	1	0	-	1	0	1	1	0	-	1	0	1				
<i>Pteroneta brevichela</i> M	0	-	0	1	-	0	0	1	0	0	0	0	0	1	1	0	1	0	0	1	1	-	0	0	1	1	0	-	1	0	1	0	-	1	0	1				
<i>Pteroneta brevichela</i> F	-	0	0	1	-	0	0	1	-	0	0	0	0	0	1	1	0	0	1	0	0	-	0	0	1	1	0	-	1	0	0	0	-	1	0	1				
<i>Pteroneta baiteta</i> M	0	-	0	1	-	-	1	0	0	0	0	0	0	1	1	0	1	1	0	1	1	-	0	0	1	1	0	-	1	1	0	-	1	0	1					
<i>Pteroneta baiteta</i> F	-	0	0	1	-	-	1	-	0	0	0	0	0	1	1	0	1	1	0	1	1	-	0	0	1	1	0	-	1	1	0	-	1	0	1					
<i>Pteroneta madangiensis</i> M	0	-	0	1	-	0	0	1	0	0	0	0	1	1	0	1	1	1	1	1	-	0	0	1	1	0	-	0	1	1	0	-	1	0	1					
<i>Pteroneta madangiensis</i> F	-	0	0	1	-	0	0	1	-	0	0	0	0	1	1	0	1	1	1	1	0	-	0	1	1	0	-	1	0	1	1	0	-	1	0	1				

Species / character	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
<i>Hesperocranum rothi</i>	0	1	1	0	2	0	1	0	0	0	2	0	4	2	1	0	0	0	-	1	1	1	0	0	1	1	1	1	0	0	0	0	1	0	1	0	1	0		
<i>Mesiotelus cyprius</i>	2	2	3	0	2	0	4	2	1	0	2	1	4	2	1	0	1	1	0	1	1	1	0	0	1	1	0	0	0	0	0	1	0	1	0	1	0			
<i>Liocranum rupicola</i>	[23]2	3	0	2	0	4	2	1	0	2	1	1	1	0	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1	1			
<i>Corinna nitens</i>	2	1	3	0	1	1	3	0	0	1	1	1	3	2	1	0	0	0	-	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1	0			
<i>Clubiona pallidula</i>	[23]2	0	0	2	0	3	0	1	1	2	1	2	2	1	0	1	1	0	0	0	1	1	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0			
<i>Clubiona phragmitis</i>	[23]2	0	0	2	0	3	0	1	1	2	0	4	1	1	0	0	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	2	0	1	0	0	0			
<i>Agroeca brunnea</i>	3	3	0	0	1	1	4	0	0	1	2	1	4	2	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1	0			
<i>Xantharia floreni</i>	5	1	0	1	0	0	0	0	0	-	-	-	-	0	0	0	-	0	1	1	1	0	1	-	2	-	1	1	1	0	0	[01]0	-	-	0	0	0			
<i>Pristina viridis</i>	5	1	-	0	2	1	0	1	0	-	-	-	-	0	0	0	-	0	1	1	1	0	1	-	0	-	1	1	1	0	0	1	2	-	-	0	0	0		
<i>Pristina prima</i>	[25]2	0	1	3	0	2	0	0	0	2	0	2	1	1	0	0	1	0	1	1	1	0	1	1	0	0	0	1	3	[01]0	0	0	1	0	0	0				
<i>Nusatidia javana</i>	3	1	0	0	2	0	1	0	1	1	2	1	3	1	0	0	0	-	0	0	1	0	0	0	0	0	1	1	1	0	0	1	0	0	1	0	0			
<i>Cheiracanthium pennuliferum</i>	3	1	0	0	1	0	0	0	0	-	-	-	-	1	0	0	-	0	1	1	1	1	0	-	0	-	1	1	1	0	0	2	-	-	0	0	0			
<i>Cheiracanthium klabati</i>	2	0	0	0	1	0	0	0	0	-	0	1	0	0	0	1	0	0	-	0	1	1	1	0	1	0	0	0	0	0	0	1	1	0	0	0	0			
<i>Tamin pseudodrassus</i>	3	-	0	-	-	-	-	-	0	2	0	1	3	1	0	0	1	1	1	1	1	1	0	-	0	-	0	1	1	0	0	-	1	0	0	0	0	0		
<i>Matidia simia</i>	2	1	0	1	3	0	2	0	0	-	-	-	-	1	0	0	-	1	1	1	1	1	1	0	-	0	-	1	1	1	0	0	1	1	-	0	0	0		
<i>Matidia mas</i>	2	1	3	0	0	0	2	0	0	-	-	-	-	1	0	0	-	1	1	1	1	1	1	0	-	0	-	1	1	1	0	0	1	1	-	0	0	0		
<i>Malamatidia bohorokensis</i>	2	1	0	1	3	0	2	0	0	0	2	0	2	1	0	0	0	1	0	0	1	1	1	0	0	0	1	1	1	0	0	1	1	0	0	0	0			
<i>Matidia chlora</i>	3	1	0	0	3	0	2	0	0	1	2	0	2	1	1	1	0	0	-	1	1	1	1	0	1	1	0	0	1	0	1	1	0	0	0	0	0			
<i>Matidia muju</i>	3	1	3	0	3	0	2	0	0	1	2	0	2	1	0	1	0	-	1	1	1	1	0	1	1	0	0	1	1	0	0	1	1	0	0	0	0			
<i>Matidia missai</i>	3	1	0	0	3	0	2	0	0	0	2	0	2	1	1	1	0	0	-	1	1	1	1	0	1	1	1	0	0	1	1	1	0	0	1	0	0	0		
<i>Matidia strobbei</i>	3	1	0	0	3	0	2	1	0	1	2	0	2	1	1	1	0	0	-	1	1	1	1	0	1	1	1	0	0	1	1	1	0	0	1	0	0	0		
<i>Arabellata nimispalpata</i> M	0	0	0	1	2	2	2	2	2	-	-	-	-	1	0	1	0	0	0	1	1	1	1	0	-	0	-	1	1	1	0	0	-	1	0	0	0	0		
<i>Arabellata nimispalpata</i> F	0	-	0	-	-	-	-	-	0	0	0	0	0	1	1	0	1	0	0	1	1	1	1	0	-	0	-	1	1	1	0	0	-	1	0	0	0	0		
<i>Arabellata terebrata</i> M	2	1	0	0	2	0	2	0	0	-	-	-	-	1	0	1	0	0	0	1	1	1	1	0	-	0	-	1	1	1	0	0	-	1	0	0	0	0		
<i>Arabellata terebrata</i> F	3	-	0	-	-	-	-	-	0	2	1	2	1	1	1	0	1	0	0	1	1	1	1	0	-	1	-	0	1	1	1	0	-	1	0	0	0	0		
<i>Invexillata caerulea</i> M	4	1	?	1	3	0	0	0	0	-	-	-	-	0	0	1	0	1	0	1	1	1	1	0	-	1	-	1	1	1	0	0	2	1	-	0	0	1		
<i>Invexillata caerulea</i> F	4	-	?	-	-	-	-	-	0	2	0	2	1	1	0	0	1	1	0	1	1	1	1	0	-	0	-	0	1	1	1	0	-	2	1	0	0	1		
<i>Invexillata viridiflava</i> M	2	-	?	0	3	0	0	0	0	-	-	-	-	0	0	1	1	0	0	1	1	1	1	0	-	0	-	1	1	1	0	0	2	1	-	0	1	0		
<i>Invexillata viridiflava</i> F	2	-	?	-	-	-	-	-	0	0	0	0	1	1	0	0	1	1	0	0	1	1	1	1	0	-	0	-	0	1	1	1	0	-	2	1	0	1	0	
<i>Invexillata maculata</i> M	0	0	?	1	3	0	0	0	0	-	-	-	-	0	0	1	1	0	0	1	1	1	1	1	0	-	0	-	1	1	1	0	0	2	1	-	0	0	1	
<i>Invexillata maculata</i> F	0	0	?	-	-	-	-	-	0	0	1	1	0	1	0	0	1	1	0	1	1	1	1	1	0	-	0	-	0	1	1	1	0	-	2	1	0	0	0	
<i>Pteroneta longichelata</i> M	1	1	3	1	2	0	2	0	0	-	-	-	-	0	0	1	1	0	1	2	1	1	1	1	0	-	0	-	1	1	1	0	0	2	1	-	0	0	1	
<i>Pteroneta longichelata</i> F	0	-	3	-	-	-	-	-	0	0	0	2	1	1	0	0	1	1	0	1	2	1	1	1	0	-	0	-	0	1	1	1	0	-	2	1	0	0	0	
<i>Pteroneta brevichelata</i> M	1	1	3	1	3	0	0	0	0	-	-	-	-	0	0	1	0	0	1	2	1	1	1	1	0	-	1	-	1	1	0	0	2	1	-	0	0	1		
<i>Pteroneta brevichelata</i> F	1	-	3	-	-	-	-	-	0	0	0	2	0	1	0	0	1	0	0	1	2	1	1	1	0	-	1	-	0	1	1	0	0	-	2	1	0	0	0	
<i>Pteroneta baiteta</i> M	1	0	3	0	3	0	0	0	0	-	-	-	-	0	0	1	0	0	0	1	2	1	1	1	1	0	-	1	-	1	1	0	0	2	1	-	0	0	1	
<i>Pteroneta baiteta</i> F	1	-	3	-	-	-	-	-	0	0	0	0	0	0	0	0	1	0	0	1	2	1	1	1	1	0	-	0	1	1	0	0	-	2	1	0	0	0	0	
<i>Pteroneta madangiensis</i> M	1	0	3	1	3	0	0	0	0	-	-	-	-	0	0	1	0	0	0	1	2	1	0	-	1	-	1	1	0	0	0	1	-	-	0	0	1	0	0	0
<i>Pteroneta madangiensis</i> F	1	-	3	-	-	-	-	-	0	0	0	0	0	1	0	0	1	0	0	1	2	1	0	-	1	-	0	1	1	0	0	-	2	1	0	0	0	0		

Species / character	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100	101	102	103	104	105	106	107	108	109	110	111	112	113	114	115	116	117	118	119	120
<i>Hesperocranum rothi</i>	1	-	1	0	0	0	1	0	0	0	2	0	0	0	1	1	1	2	1	0	0	0	-	0	0	0	0	0	0	0	0	0	1	4						
<i>Mesiotelus cyprius</i>	1	-	0	0	0	1	1	0	1	1	2	0	1	0	0	1	1	2	0	0	0	0	-	0	0	0	0	0	0	0	0	0	1							
<i>Liocranum rupicola</i>	1	-	0	2	0	0	0	0	2	0	1	0	1	0	1	2	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	1							
<i>Corinna nitens</i>	0	1	0	2	0	1	0	0	2	0	2	0	0	1	1	1	0	2	0	0	0	0	-	0	0	0	0	0	0	0	0	0	2	3						
<i>Clubiona pallidula</i>	0	1	0	2	0	1	0	0	2	1	2	0	0	2	1	1	0	1	0	0	1	1	0	0	0	1	0	0	0	0	0	0	2	2						
<i>Clubiona phragmitis</i>	0	1	0	0	0	1	1	0	0	0	2	0	1	1	1	0	2	0	0	0	0	-	0	0	0	0	1	0	0	0	0	0	2	2						
<i>Agroeca brunnea</i>	0	1	0	2	0	1	0	0	2	0	1	0	1	1	1	0	2	0	0	0	0	-	0	0	0	0	1	0	0	0	0	0	0	2	3					
<i>Xantharia floreni</i>	0	-	1	2	0	0	1	0	0	1	2	0	0	2	1	2	0	0	0	0	-	0	0	0	0	0	0	0	0	0	0	0	-	-						
<i>Pristina viridis</i>	1	1	0	0	0	0	1	0	0	1	2	0	0	1	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Pristina prima</i>	1	1	0	0	0	0	1	1	0	0	2	0	0	1	0	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0	0	0						
<i>Nusatidia javana</i>	0	-	0	0	0	0	1	1	1	0	1	1	0	1	1	[01]	0	2	0	0	1	0	-	0	0	0	0	1	0	0	0	0	0	0						
<i>Cheiracanthium pennuliferum</i>	-	0	2	0	1	2	0	1	1	2	0	1	1	1	1	0	1	1	0	-	0	0	-	0	0	0	0	0	0	0	0	-	-							
<i>Cheiracanthium klabati</i>	1	1	0	0	0	1	1	0	0	1	0	1	1	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0	0	0						
<i>Tamin pseudodrassus</i>	1	1	0	2	0	1	1	0	0	1	2	0	0	0	1	0	0	0	1	0	-	-	-	-	-	0	-	0	0	0	0	0	0	0						
<i>Matidia simia</i>	1	1	0	0	0	1	1	0	0	1	2	0	1	0	0	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0	-	-						
<i>Matidia mas</i>	1	1	0	0	0	0	1	1	0	0	1	2	0	0	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Malamatidia bohorokensis</i>	1	1	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	1	0	-	0	0	0	0	0	0	0	0	0	0	0	0							
<i>Matidia chlora</i>	0	-	0	0	0	0	1	1	0	0	1	2	0	0	0	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0	0						
<i>Matidia muju</i>	0	1	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0	0						
<i>Matidia missai</i>	1	1	0	0	0	0	1	1	0	0	1	2	0	1	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0	0						
<i>Matidia strobbei</i>	1	1	0	0	0	0	1	1	0	0	1	2	0	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	0						
<i>Arabellata nimispalpata</i> M	1	1	0	0	0	0	1	1	0	0	1	2	0	0	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	-	-						
<i>Arabellata nimispalpata</i> F	1	1	0	0	0	0	1	1	0	0	-	-	-	-	0	1	0	0	2	0	0	0	1	-	-	-	-	0	-	0	0	0	0	0						
<i>Arabellata terebrata</i> M	1	1	0	0	0	0	1	1	0	0	1	2	0	1	0	1	0	0	2	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-						
<i>Arabellata terebrata</i> F	1	1	0	0	0	0	1	1	0	0	1	2	0	1	0	1	0	0	2	0	0	0	1	-	-	-	-	-	-	-	-	-	-	0						
<i>Invexillata caerulea</i> M	0	1	0	0	0	0	1	1	0	0	1	2	0	0	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Invexillata caerulea</i> F	0	1	0	0	0	0	1	1	0	0	1	2	0	0	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Invexillata viridiflava</i> M	0	0	1	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	2	0	0	0	1	-	-	-	-	-	-	-	-	-	-	-						
<i>Invexillata viridiflava</i> F	0	0	0	0	0	0	1	1	0	0	1	1	0	0	1	1	0	0	2	0	0	0	1	-	-	-	-	-	-	-	-	-	-	0						
<i>Invexillata maculata</i> M	0	1	0	0	0	0	1	1	0	0	1	2	0	0	0	1	0	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Invexillata maculata</i> F	0	1	0	0	0	0	1	1	0	0	1	2	0	0	0	1	0	0	2	0	0	0	1	-	-	-	-	-	-	-	-	-	-	0						
<i>Pteroneta longichelata</i> M	1	1	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Pteroneta longichelata</i> F	1	1	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Pteroneta brevichelata</i> M	1	1	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Pteroneta brevichelata</i> F	-	-	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	2	0	0	1	-	-	-	-	-	0	-	0	0	0	0	0						
<i>Pteroneta baiteta</i> M	1	1	0	0	0	0	1	1	0	0	1	2	0	1	0	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Pteroneta baiteta</i> F	1	1	0	0	0	0	1	1	0	0	1	2	0	1	1	1	1	0	2	0	0	1	0	-	0	0	0	0	0	0	0	0	-	-						
<i>Pteroneta madangensis</i> M	1	1	0	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	2	0	0	0	1	-	-	-	-	-	0	-	0	0	0	0						
<i>Pteroneta madangensis</i> F	1	1	0	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	2	0	0	0	1	-	-	-	-	-	0	-	0	0	0	0						

Species / character	121	122	123	124	125	126	127	128	129	130	131	132	133	134	135	136	137	138	139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159		
<i>Hesperocranum rothi</i>	0	0	-	0	1	0	0	0	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	0	0	0	0	0	-	0	1	0	0	0						
<i>Mesiotelus cypricus</i>	0	0	-	0	1	1	0	1	0	0	0	0	0	0	0	1	1	0	1	0	0	1	1	0	0	0	-	0	1	1	0	0	0								
<i>Liocranum rupicola</i>	0	0	-	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	0	1	1	0	0	0	0	0	-	0	1	1	0	0	0								
<i>Corinna nitens</i>	0	0	-	0	1	0	6	1	0	0	0	0	0	0	1	1	0	2	0	-	1	1	2	0	0	0	1	0	0	0	-	0	0	1	0	0					
<i>Clubiona pallidula</i>	0	0	-	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	-	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0					
<i>Clubiona phragmitis</i>	0	0	-	0	1	0	1	0	0	0	0	0	0	0	1	1	1	0	0	-	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	0					
<i>Agroeca brunnea</i>	1	0	-	0	1	0	0	0	0	1	1	0	0	0	1	1	0	0	1	2	3	1	1	0	0	1	1	0	0	0	-	0	0	1	0	0					
<i>Xantharia floreni</i>	-	0	-	0	1	1	9	1	0	0	0	0	0	0	0	0	-	0	-	9	0	1	0	0	0	-	-	-	-	-	-	-	-	0	-	0	0				
<i>Pristina viridis</i>	-	0	-	0	1	0	0	1	0	0	0	0	0	0	0	0	-	0	-	0	0	1	0	0	0	-	-	-	-	-	-	-	-	0	-	0	0				
<i>Pristina prima</i>	0	0	-	0	1	1	3	1	0	0	0	0	0	0	0	0	-	0	-	9	1	1	0	0	0	0	0	0	0	0	0	1	1	2	0	0	0				
<i>Nusatidia javana</i>	0	0	-	0	1	1	7	1	0	0	0	0	0	0	0	1	1	0	0	-	7	0	1	0	0	0	0	0	0	0	0	1	1	-	0	0	0				
<i>Cheiracanthium pennuliferum</i>	-	0	-	0	1	0	0	1	0	1	1	0	0	0	0	-	0	-	2	0	0	0	0	-	-	-	-	-	-	-	-	-	0	-	0	0					
<i>Cheiracanthium klabati</i>	0	0	-	0	1	0	0	1	0	0	0	0	0	0	0	1	1	0	2	0	0	0	0	0	1	0	0	0	0	0	0	1	1	0	0	0					
<i>Tamin pseudodrassus</i>	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	1	0	1	0	0	1	1	2	0	-	0	0					
<i>Matidia simia</i>	-	0	-	0	1	0	6	1	0	0	0	0	0	0	0	0	1	1	0	0	-	7	0	1	0	0	0	-	-	-	-	-	0	-	0	0					
<i>Matidia mas</i>	-	0	-	0	1	1	0	1	0	0	0	0	0	0	0	0	1	1	0	0	-	7	1	1	0	0	0	-	-	-	-	-	0	-	0	0					
<i>Malamatidia bohorokensis</i>	0	0	-	0	1	0	7	1	0	0	0	0	0	0	0	0	1	1	3	0	-	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0					
<i>Matidia chlora</i>	0	0	-	0	1	0	7	1	0	0	0	0	0	0	0	1	0	-	0	-	6	0	1	0	0	0	0	0	0	0	0	1	0	0	0						
<i>Matidia muju</i>	0	0	-	0	1	0	7	1	0	0	0	0	0	0	0	1	0	-	0	-	6	0	3	0	0	0	0	0	0	0	0	2	1	0	0	0					
<i>Matidia missai</i>	0	0	-	0	1	0	6	1	0	0	0	0	0	0	0	0	1	0	-	0	-	6	0	1	0	0	0	0	0	0	0	1	1	0	0	0					
<i>Matidia strobbei</i>	0	0	-	0	1	0	6	1	0	0	0	0	0	0	0	0	1	0	-	0	-	6	0	3	0	0	0	0	0	0	0	0	2	1	0	0	0				
<i>Arabellata nimispalpata</i> M	-	0	-	0	1	0	1	1	0	0	0	0	0	1	1	0	-	0	-	7	0	1	0	0	0	-	-	-	-	0	-	0	0	0	0	0	0				
<i>Arabellata nimispalpata</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	2	-	0	0	
<i>Arabellata terebrata</i> M	-	0	-	0	1	0	6	0	0	0	0	0	0	1	0	-	0	-	7	0	1	0	0	0	-	-	-	-	-	0	-	0	0	0	0	0					
<i>Arabellata terebrata</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	0	-	0	0	
<i>Invexillata caerulea</i> M	-	0	-	0	1	3	5	0	0	0	0	0	0	0	0	-	0	-	8	0	1	0	0	0	-	-	-	-	-	2	0	-	0	1	0						
<i>Invexillata caerulea</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	2	0	-	0	1
<i>Invexillata viridiflava</i> M	-	0	-	0	1	3	3	0	0	0	0	0	0	0	-	0	-	8	0	3	0	0	0	-	-	-	-	-	0	-	0	-	0	1	1	2	0	-	0	1	
<i>Invexillata viridiflava</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	2	1	-	0	1	0	
<i>Invexillata maculata</i> M	-	0	-	0	1	3	1	0	0	0	0	0	0	0	-	0	-	8	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	0	-	1	0				
<i>Invexillata maculata</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	1	-	0	1	0
<i>Pteroneta longichela</i> M	-	0	-	0	1	1	6	1	0	0	0	0	0	0	-	1	0	8	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	0	-	1	1				
<i>Pteroneta longichela</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	2	-	0	1	1
<i>Pteroneta brevichela</i> M	-	0	-	0	1	0	8	1	0	0	0	0	0	0	-	0	-	8	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	0	-	1	1				
<i>Pteroneta brevichela</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	0	-	0	1	1
<i>Pteroneta baiteta</i> M	-	0	-	0	1	0	8	0	0	0	1	0	0	0	-	0	-	0	0	8	0	0	0	-	-	-	-	-	-	-	-	-	-	0	-	1	1				
<i>Pteroneta baiteta</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	2	-	0	1	1
<i>Pteroneta madangiensis</i> M	-	0	-	0	1	0	8	0	0	0	0	0	0	0	-	0	-	8	0	1	0	0	0	-	-	-	-	-	-	-	-	-	-	0	-	1	1				
<i>Pteroneta madangiensis</i> F	0	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0	0	0	0	0	0	0	0	0	0	1	1	0	-	0	1	1

Table 4. – Character matrix used for Fig. 37. Conspecific males and females were here scored under the same terminal. For taxon abbreviations see text. For 1-157: see BOSSELAERS & JOCQUÉ (2002), for additional characters 158-161: see Table 2.

Species / character	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40
<i>Hesperocranum rothi</i>	1	0	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	[01]
<i>Mesiotelus cyprius</i>	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	1	0	1	1	0	0	1	1	0	0	1	1	0	1	2		
<i>Liocranum rupicola</i>	0	1	0	0	1	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	2	0	2	2	0	0	1	0	0	1	1	0	1	[23]			
<i>Corinna nitens</i>	1	1	0	0	0	0	0	0	0	0	0	0	0	1	1	0	1	1	1	1	0	[01]10	0	1	0	2	[01]2	0	1	0	0	0	0	0	0	0	2	0	2	
<i>Clubiona pallidula</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	2	1	1	0	1	1	0	0	1	1	0	1	2	0	2		
<i>Clubiona phragmitis</i>	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	0	1	1	1	0	0	1	0	0	1	1	0	1	2	0	2	
<i>Agroeca brunnea</i>	1	1	1	1	-	0	0	0	1	0	0	0	0	1	1	1	1	1	1	1	1	0	1	2	1	1	0	1	1	0	0	1	1	1	1	2	0	2		
<i>Xantharia floreni</i>	0	-	0	1	-	0	1	0	0	0	0	0	0	0	1	1	1	0	0	-	1	[01]11	0	0	-	0	0	1	0	-	0	1	0	0	0	2				
<i>Pristina viridis</i>	0	-	0	1	-	1	0	1	0	0	0	0	1	1	1	1	1	1	1	1	-	1	2	1	1	0	-	1	0	1	0	-	1	1	1	0	1	4		
<i>Pristina prima</i>	0	0	0	1	-	0	0	[01]0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	1	2	1	1	0	1	1	0	1	1	1	0	0	0	0	0	0	
<i>Systaria gedensis</i>	0	-	0	1	-	1	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	-	1	[01]0	1	0	-	1	0	0	1	-	1	1	0	1	1			
<i>Simalio lucorum</i>	0	-	0	1	-	0	0	1	0	0	0	0	0	0	1	1	0	1	1	1	-	0	0	0	0	-	0	0	1	0	-	0	0	-	4					
<i>Simalio petilus</i>	0	0	0	0	-	0	0	1	0	0	0	0	0	0	1	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0		
<i>Simalio phaeocephalus</i>	0	-	0	0	-	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	-	0	0	0	0	-	0	0	1	0	-	0	0	0	0	0	4			
<i>Nusatidia javana</i>	0	0	[01]0	-	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	2	1	1	0	1	1	0	0	1	1	1	0	0	0	2				
<i>Cheiracanthium pennuliferum</i>	0	-	1	1	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	-	1	0	0	1	-	1	0	1	0	-	1	1	0	-	0	2		
<i>Cheiracanthium klabati</i>	0	0	0	0	-	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2	0	1	0	1	[01]1	1	0	0	1	1	0	1	2			
<i>Miturga lineata</i>	0	-	0	1	-	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	-	1	0	0	1	1	-	1	1	0	1	-	1	1	[12]-	2			
<i>Tamin pseudodrassus</i>	-	0	0	1	-	1	0	1	-	0	0	0	0	1	1	1	1	1	1	1	1	1	0	-	0	0	-	1	1	0	0	1	1	1	-	2	0	2		
<i>Matidia simia</i>	0	-	0	1	-	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	-	0	2	1	1	0	-	1	1	0	1	-	1	1	0	-	1		
<i>Matidia mas</i>	0	-	0	1	-	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	-	1	0	0	1	-	1	1	0	1	-	1	1	0	-	1			
<i>Malamatidia bohorokensis</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	0	1	1	0	1	1	0	1	1	0	0	0	1	1	0	0	1	1	0	1	0	1	2				
<i>Matidia chlora</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	1	1	0	1	1	1	1	1	0	1	1	0	1			
<i>Matidia muju</i>	-	0	0	1	-	0	0	0	-	0	0	0	0	1	1	1	1	1	1	1	1	1	-	1	1	0	0	1	1	1	1	-	1	1	0	1				
<i>Matidia missai</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	2	1	1	0	1	1	1	1	1	1	1	0	1				
<i>Matidia strobbi</i>	0	0	0	1	-	0	0	0	0	0	0	0	0	1	1	1	1	1	1	1	1	1	0	2	1	1	0	1	1	1	1	1	1	1	0	1	2			
<i>Arabellata nimispalpata</i>	0	0	0	1	0	?	?	?	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	0	2	2	0	1	0	0	1	0	2	0	2	1			
<i>Arabellata terebrata</i>	0	0	0	1	0	0	0	1	0	0	0	0	0	0	1	1	1	1	1	1	1	1	0	0	0	2	2	0	0	1	1	1	2	0	2	2				
<i>Invexillata caerulea</i>	0	0	0	1	-	0	0	1	0	0	0	0	0	1	1	1	1	1	1	1	1	0	1	2	1	1	0	1	1	1	1	1	0	1	1	1				
<i>Invexillata viridiflava</i>	0	0	0	1	-	0	0	1	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	2	1	1	0	1	0	1	1	1	1	0	1	2				
<i>Invexillata maculata</i>	0	0	0	1	-	0	0	1	0	0	0	0	0	0	1	1	0	1	1	0	1	0	0	2	1	1	0	1	1	1	1	0	1	1	0	1				
<i>Pteroneta longichela</i>	0	0	0	1	-	-	1	0	0	0	0	0	0	1	1	1	1	1	1	1	0	0	1	1	1	1	0	1	1	0	1	0	1	1	0	1				
<i>Pteroneta brevichela</i>	0	0	0	1	-	0	0	1	0	0	0	0	0	1	0	1	0	1	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	1	0	1				
<i>Pteroneta baiteta</i>	0	0	0	1	-	-	1	0	0	0	0	0	0	1	1	0	1	0	1	0	0	1	0	0	0	1	1	0	0	1	0	0	1	0	1					
<i>Pteroneta madangiensis</i>	0	0	0	1	-	0	0	1	0	0	0	0	0	1	1	1	0	1	1	1	0	0	0	1	1	0	0	1	1	0	0	1	1	0	1					

Species / character	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80
<i>Hesperocranum rothi</i>	0	1	1	0	2	0	1	0	0	0	2	0	4	2	1	0	0	0	-	1	1	1	0	0	1	1	1	0	0	0	0	1	0	1	0	1	0			
<i>Mesiotelus cyprius</i>	2	2	3	0	2	0	4	2	1	0	2	1	4	2	1	0	1	1	0	1	1	1	0	0	1	1	0	0	0	0	1	0	1	0	1	0				
<i>Liocranum rupicola</i>	[23]2	3	0	2	0	4	2	1	0	2	1	1	1	0	0	0	1	1	0	0	1	1	1	0	0	0	0	0	0	0	1	0	1	0	1	1				
<i>Corinna nitens</i>	2	2	1	3	0	1	1	3	0	0	1	1	3	2	1	0	0	0	-	0	1	1	1	0	0	0	0	0	0	0	0	1	0	1	0	1	1			
<i>Clubiona pallidula</i>	[23]2	0	0	2	0	3	0	1	1	2	1	2	2	1	0	1	1	0	0	1	1	1	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0			
<i>Clubiona phragmitis</i>	[23]2	0	0	2	0	3	0	1	1	2	0	4	1	1	0	0	1	1	1	1	0	1	1	1	0	0	0	0	0	0	0	2	0	1	0	0	0			
<i>Agroeca brunnea</i>	3	3	3	0	0	1	1	4	0	0	1	2	1	4	2	1	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	1	0	1	0	1			
<i>Xantharia floreni</i>	5	1	0	1	0	0	0	0	0	-	-	-	-	-	0	0	0	-	0	1	1	1	0	1	-	2	-	1	1	1	0	0	[01]0	-	-	0	0			
<i>Pristina viridis</i>	5	1	-	0	2	1	0	1	0	-	-	-	-	-	0	0	0	-	0	1	1	1	1	0	1	-	0	1	2	-	-	0	0							
<i>Pristina prima</i>	2	[25]2	0	1	3	0	2	0	0	0	2	0	2	1	1	0	0	1	0	1	1	1	1	0	1	1	1	1	0	0	0	1	3	[01]0						
<i>Systaria gedensis</i>	3	1	0	1	3	0	0	0	0	-	-	-	-	-	0	0	1	1	0	1	1	1	0	1	-	0	-	1	1	0	1	0	-	0	0					
<i>Simalio lucorum</i>	4	4	0	0	0	1	0	0	0	0	-	-	-	-	-	0	0	0	-	0	0	0	1	1	1	-	1	1	0	1	0	0	1	-	-	0				
<i>Simalio petilus</i>	[42][42]0	0	1	2	0	0	0	0	0	0	0	0	0	0	1	0	0	0	-	0	0	0	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0			
<i>Simalio phaeocephalus</i>	4	0	0	1	2	0	0	0	0	-	-	-	-	-	0	0	0	-	0	0	0	1	1	0	-	1	-	1	1	0	0	1	0	-	-	0	0			
<i>Nusatidia javana</i>	3	1	0	0	2	0	2	0	1	1	2	1	3	1	0	0	0	-	0	0	0	1	0	0	0	0	0	1	1	0	0	1	0	0	1	0	0			
<i>Cheiracanthium pennuliferum</i>	3	1	0	0	1	0	0	0	0	-	-	-	-	-	1	0	0	-	0	1	1	1	1	0	-	0	-	1	1	0	0	2	-	-	0	0	0			
<i>Cheiracanthium klabati</i>	2	0	0	0	1	0	0	0	0	-	0	1	0	0	0	1	0	0	-	0	1	1	1	0	0	0	0	1	0	0	0	1	0	0	0	0				
<i>Miturga lineata</i>	2	2	2	0	1	2	1	2	1	0	-	-	-	-	0	0	0	0	0	0	1	1	1	1	0	-	2	-	1	1	1	1	0	0	1	0	0			
<i>Tamin pseudodrassus</i>	3	3	-	0	-	-	-	-	0	2	0	1	3	1	0	0	1	1	1	1	1	1	0	-	0	-	0	1	1	0	1	0	-	1	0	0				
<i>Matidia simia</i>	1	2	1	0	1	3	0	2	0	0	-	-	-	-	1	0	0	-	0	1	1	1	0	1	-	0	-	1	1	1	1	0	0	1	1	-	0			
<i>Matidia mas</i>	1	2	1	3	0	0	0	2	0	0	-	-	-	-	1	0	0	-	1	1	1	1	1	0	-	0	-	1	1	1	1	0	0	1	1	-	0			
<i>Malamatidia bohorokensis</i>	2	1	0	1	3	0	2	0	0	0	2	0	2	1	0	0	0	1	0	0	1	1	1	0	1	0	0	1	1	0	0	1	0	0	0	0				
<i>Matidia chlora</i>	2	3	1	0	0	3	0	2	0	0	1	2	0	2	1	1	1	0	0	-	1	1	1	1	0	1	1	1	0	0	1	0	1	0	0	0				
<i>Matidia muju</i>	2	2	-	3	-	-	-	-	0	2	-	-	-	0	0	0	-	0	1	1	1	1	1	0	-	1	-	1	1	1	1	1	0	-	1	0	0			
<i>Matidia missai</i>	2	3	1	0	0	3	0	2	0	0	0	2	0	2	1	1	1	0	0	-	1	1	1	1	0	1	1	1	1	0	0	1	0	1	0	0				
<i>Matidia strobbei</i>	3	1	0	0	3	0	2	1	0	1	2	0	2	1	1	1	0	0	-	1	1	1	1	0	1	0	0	1	1	1	0	1	0	0	0	0				
<i>Arabellata nimispalpata</i>	0	0	0	1	2	2	2	2	0	0	0	0	0	1	1	0	1	0	0	1	1	1	0	0	0	0	0	1	1	1	0	1	0	0	0	0				
<i>Arabellata terebrata</i>	2	1	0	0	2	0	2	0	0	0	2	1	2	1	1	1	0	1	0	0	1	1	1	0	1	0	0	1	1	1	0	0	1	0	0	0				
<i>Invexillata caerulea</i>	4	1	?	1	3	0	0	0	0	0	2	0	2	1	1	0	0	1	1	0	1	1	1	1	0	0	0	1	0	1	1	1	0	2	1	0	1			
<i>Invexillata viridiiflava</i>	2	-	?	0	3	0	0	0	0	0	0	1	1	0	0	1	1	0	1	1	1	1	0	0	0	0	0	1	1	1	1	0	2	1	2	1	0			
<i>Invexillata maculata</i>	0	0	?	1	3	0	0	0	0	0	1	1	0	1	0	0	1	1	0	1	1	1	1	0	0	0	0	1	1	1	1	0	0	2	1	2	1	0		
<i>Pteroneta longichela</i>	1	1	3	1	2	0	2	0	0	0	0	2	1	1	0	0	1	1	0	1	2	1	1	1	0	0	0	1	1	1	0	0	2	1	2	1	0			
<i>Pteroneta brevichela</i>	1	1	3	1	3	0	0	0	0	0	0	2	0	1	0	0	1	0	0	1	2	1	1	1	1	0	0	1	1	1	0	0	2	1	2	1	0			
<i>Pteroneta baiteta</i>	1	0	3	0	3	0	0	0	0	0	0	0	0	0	1	0	0	1	2	1	1	1	1	0	1	0	1	1	0	0	2	1	2	1	0	1	1			
<i>Pteroneta madangensis</i>	1	0	3	1	3	0	0	0	0	0	0	1	0	0	1	0	0	1	2	1	0	1	1	1	0	1	0	0	1	2	1	0	1	2	1	0	1			

